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E-01345A-10-0219

IN THE MATTER OF THE APPLICATION OF ARIZONA PUBLIC SERVICE COMPANY FOR APPROVAL OF THE COMPANY'S 2011 DEMAND SIDE MANAGEMENT IMPLEMENTATION PLAN

DOCKET NO. E-01345A-10-_____

APPLICATION

Arizona Corporation Commission
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## I. INTRODUCTION

Arizona Public Service Company ("APS" or "Company") makes this Application in compliance with the Demand Side Management ("DSM") provisions contained in Decision No. 71448 (December 30, 2009). In Decision No. 71448, the Arizona Corporation Commission ("Commission") adopted the Proposed Settlement Agreement ("Settlement Agreement") in the Company's most recent rate case.[1] The Settlement Agreement required APS to file an annual "Energy Efficiency Implementation Plan for 2010, 2011, and 2012." The attached 2011 Demand Side Management Implementation Plan ("2011 Plan") meets the energy efficiency ("EE") requirements of the Settlement Agreement.[2]

The DSM provisions[3] of the Settlement Agreement require that APS describe new and/or expanded programs or program elements necessary to achieve the 2011 EE savings goal of 1.25% of APS's total energy resources needed to meet retail load, estimated energy or demand savings by program, and a range of estimated program costs necessary to meet the savings goal. Finally, for any new EE programs[4], the Company and Staff are required to

[1] Docket No. E-01345A-08-0172.
[2] APS's 2011 DSM Plan (Exhibit A) includes both EE and demand response program elements, which are subsets of DSM.
[3] *See* Agreement at Section 14.9.
[4] Modifications to existing Commission-approved program elements or adjustments to spending levels by program from year to year generally do not require an updated cost-effectiveness test.

perform cost effectiveness tests by considering criteria and parameters reviewed by the DSM Collaborative.[5]

## II. APS'S 2011 DEMAND SIDE MANAGEMENT IMPLEMENTATION PLAN

APS submits its 2011 Plan for Commission approval, which includes provisions necessary to achieve the energy savings goals agreed to by the parties in the Settlement Agreement. This Application contains an overview of each of the proposed new programs and measures, the estimated energy and demand savings by program, and the estimated program costs by program, for both new and expanded programs, as required by the Settlement Agreement. APS's 2011 Plan also includes the following:

- an estimate of the annual megawatt hour ("MWh") savings goal for 2011;
- a summary of all existing EE and Demand Response ("DR") programs and their MWh contribution toward meeting the overall energy savings goal;
- expected EE program impacts, including annual MWh and megawatt ("MW") savings, lifetime MWh saved, societal benefits, societal costs, and net benefits to customers;
- anticipated EE environmental benefits from the proposed program portfolio;
- preliminary budgets for all programs in the EE portfolio; and
- projected budgets for all DR programs and initiatives.

To implement the 2011 Plan, APS estimates a 2011 Plan budget of approximately $79 million, including the budget for both EE program implementation and DR program implementation. Additional detail of that budget and the other elements making up the requested demand side management adjustment charge ("DSMAC") for 2011-2012 (March through February) is set forth at Table 6 of the 2011 Plan.

[5] The DSM Collaborative is comprised of EE experts and stakeholder representatives. In Decision No. 67744 (April 7, 2005), the Commission ordered APS to implement and maintain a DSM working group to solicit and facilitate stakeholder input, advise APS on program implementation, develop future DSM programs and review DSM program performance.

## A. Program Enhancements

APS is requesting approval of several specific program enhancements which are believed to improve the current EE programs and to increase the ability to meet the energy savings goal. These proposed enhancements are changes to existing programs and, therefore, do not require a cost effectiveness test. The requested enhancements are outlined below:

### 1. Existing Residential Programs.

- *Consumer Products:* Increase the annual limit on the number of free "giveaway" compact fluorescent light bulbs ("CFLs") from 30,000 CFLs to 150,000 CFLs annually.
- *Appliance Recycling:* Add commercial customer accounts to the Appliance Recycling program. This program will allow commercial customers free pickup service if their recycled refrigerators or freezers are in working condition, between 10 and 30 cubic feet, and meet existing eligibility requirements.
- *Low Income Bill Assistance:* The Crisis Bill Assistance agencies would be expanded beyond those included in a prior decision issued by the Commission. APS proposes the Arizona Community Action Association vet and monitor new agencies that would participate in the distribution of bill assistance funds, as well as determine the allocation of funds.

### 2. Existing Non-Residential Programs.

- *Customer Caps:* Adjust the customer caps for the Large Existing and the New Construction programs from $300,000 per calendar year to $1 million per calendar year. For all Non-residential programs APS proposes that once a customer reaches the cap, all electric savings beyond this value will be paid at 50% of the current listed incentive amount.

- *Measure Caps:* Increase the caps for Custom measures and Retro-Commissioning measures from 50% to 75% of incremental costs to be consistent with the prescriptive measure caps.
- *Direct Install:* Apply Direct Install on a 400 kW or less facility size basis, which would allow more customers to participate in the Direct Install family of measures.
- *Financing:* Expand the financing option to all customers who wish to finance their EE projects and pay back financing with their energy savings.

**B. New Programs and Program Measures**

APS is also proposing approval of entirely new programs or new program measures, as follows:

**1. New Residential Programs.**

- *New Residential Conservation Behavior Pilot Program:* Drives customer conservation behavior by providing participating residential customers with periodic reports that show how a customer's home compares with similar homes along with recommendations for specific actions that the household can take to save energy.
- *Multi-Family Homes Program:* Takes a two track approach to address the multifamily market through, 1) a direct install component that will provide simple energy savings measures at no cost as well as direct property managers toward other APS rebate programs; and 2) a per unit incentive for energy efficient new construction and major rehabilitation projects.
- *Shade Tree Pilot Program:* Administered in partnership with a local non-profit agency, provides education and incentives for

customers to plant desert adapted shade trees that will provide shade to the customer's residence.

**2. New Residential Program Measures.**

- *HVAC Diagnostics*: Provides financial incentives to customers for having their HVAC system tuned-up so that it runs more efficiently. The tune-up includes a correction of the refrigerant charge, condenser coil cleaning, and an airflow correction.
- *Room Pressure Relief:* Offers customers an incentive to help correct room pressure imbalance issues making their home more efficient and, in some cases, safer.

**3. New Non-Residential Measures (Prescriptive).**

- *Controls:* Provides devices to sense need and control ventilation fans, HVAC equipment, and other electric loads in parking garages, hotels and other conditioned space.
- *Lighting:* Promotes LED signs and traffic signals and upgrades to premium T8 fluorescent lamps.
- *HVAC:* Promotes the use of cooling towers to make air-cooled HVAC equipment more efficient.
- *Building Envelope*: Provides incentives to customers to install either window film or window screens to cut down the heat load on their buildings.
- *IT Data Center Controls:* Provides a means to maintain and turn off office computers remotely by customer personnel.
- *Refrigeration:* Promote efficient condensers, automatic door closers, efficient compressors, and head pressure control devices.
- *Motor Rewind*: Improves motor efficiency through a repair process that rewinds the motor.

- *Heat Pump Water Heaters:* Promotes water heaters that are two to three times more efficient than standard electric resistance water heaters.
- *Direct Install – Lighting:* Adds one additional measure to this family of measures - T8 to Premium T8 replacement.

**4. Other Non-Residential.**

- *Bid for Efficiency:* Allows customers or trade allies to bid competitively for program incentives within a broad range of kWh savings guidelines.

**C. Plan Savings**

APS estimates that the 2011 Plan will save an annual 391,000 MWh in 2011, while saving an estimated 3,683,000 MWh over the lifetime of the measures installed in 2011. APS anticipates the EE and DR annual energy savings will be as follows: 352,000 MWh energy savings from EE Programs; and 39,000 MWh energy savings from DR Programs. The anticipated net benefits to society over the lifetime of the program measures are $125 million. APS believes the programs in the 2011 Plan are cost effective and will provide all APS customers with significantly increased opportunities to save on their monthly electric bills.

The Commission's Electric Energy Efficiency Rulemaking (Docket No. RE-00000C-09-0427) is currently underway at the Commission.[6] Although the Proposed EE Rules have not yet been approved by the Commission, APS expects that the Proposed EE Rules will go into effect during the term of APS's 2011 Plan. The Company believes that its 2011 Plan is consistent with, and, in fact, slightly more ambitious than the Proposed EE standard because the 1.25% energy savings is based on "total energy resources" (which is the sum of retail sales plus distributed generation plus energy efficiency) rather than just retail sales.

[6] The Proposed EE Rules are now awaiting final Commission approval, and upon such approval, the Proposed EE Rules will likely be submitted to the Attorney General for review.

## D. Procedural Issues

To allow APS sufficient time to develop all of the specific details necessary to be in compliance with the cost-effectiveness test requirement for proposed new programs and measures, and in anticipation of the sequential manner in which Commission Staff expects to conduct the cost-effectiveness analysis for each new program/measure[7], APS will update and expand the information provided on new EE programs and measures for 2011 using a staggered timeline for such supplemental filings.

The Table below shows the timeline for all 2011 Plan filings.

| DSM 2011 Implementation Plan<br>Schedule of Filings for Staff and Commission Consideration<br>DSM 2011 Implementation Plan | | | | | |
|---|---|---|---|---|---|
| | | Information Filing Completion Dates* | | | |
| | | Jun 1, 2010 | Jul 1, 2010 | Aug 2, 2010 | August 16, 2010 |
| **Enhancements to Existing Programs** | | | | | |
| | **Residential** | | | | |
| 1 | Consumer Products – CFL Bulb "Giveaway" | X | | | |
| 2 | Appliance Recycling – Commercial Accounts Eligible | X | | | |
| 3 | Low Income – Crisis Bill Assistance | X | | | |
| | **Non-Residential** | | | | |
| 5 | Adjust Customer Caps | X | | | |
| 6 | Adjust Measure Caps | X | | | |
| 7 | Modify Direct Install | X | | | |
| 8 | Financing Available to All Non-residential Customers | X | | | |
| | | | | | |
| **New Programs – Residential** | | | | | |
| 1 | Conservation Behavior Pilot Program | X | | | |
| 2 | Multi-Family Homes Program | | | | X |
| 3 | Shade Tree Pilot Program | | | X | |
| | | | | | |
| **New Measures** | | | | | |
| | **Residential – Existing Homes Program** | | | | |
| 1 | HVAC Diagnostics | | | X | |
| 2 | Room Pressure Relief – Home Performance with ENERGY STAR® | | | X | |
| | | | | | |
| | **Non-Residential Prescriptive** | | | | |

[7] APS's filing timeframes were reviewed and found acceptable by Commission Staff.

| DSM 2011 Implementation Plan<br>Schedule of Filings for Staff and Commission Consideration<br>DSM 2011 Implementation Plan | | | | | |
|---|---|---|---|---|---|
| | | Information Filing Completion Dates* | | | |
| | | Jun 1, 2010 | Jul 1, 2010 | Aug 2, 2010 | August 16, 2010 |
| | **Measures** | | | | |
| 3 | Controls (4 New Measures) | | X | | |
| 4 | Lighting (3 New Measures) | | X | | |
| 5 | HVAC ( 1 New Measure) | | X | | |
| 6 | Building Envelope (1 New Measure) | | X | | |
| 7 | IT Data Centers (1 New Measure) | | X | | |
| 8 | Refrigeration (4 New Measures) | | X | | |
| 9 | Motor Rewind (1 New Measure) | | X | | |
| 10 | Heat Pump Water Heaters (1 New Measure) | | X | | |
| 11 | Direct Install – Lighting (1 New Measure) | | X | | |
| | | | | | |
| 12 | **Non-Residential – Bid for Efficiency** | | X | | |
| *All information filings will be provided on or before the dates identified in this table. | | | | | |

APS's supplemental information filings will contain additional detail on the proposed new programs and measures that will allow Commission Staff to conduct a full cost/benefit analysis on each proposed new program and measure. The supplemental filings will also provide updated estimates of the programs' budgets and MWh savings.

APS also requests consideration of the proposed program enhancements, new programs, and measures by the Commission as soon as practicable after they are filed by APS. This will allow APS to complete the necessary preparatory work prior to program launch, and offer the benefits of these new programs and measures to customers as soon as possible in 2011.

## III. DSMAC

Under the provisions of the Settlement Agreement and the Plan of Administration for the DSMAC, the Company is also filing for approval of a new DSMAC charge effective with cycle one of March 2011. The DSMAC adopted under the Settlement Agreement allows for more concurrent recovery of DSM program costs and incentives than was allowed previously. Because of the transition from a lagging DSMAC to a forward-looking DSMAC in 2009, the old DSMAC addressed costs incurred through 2008 (albeit with some under recovery due to

delayed implementation of the 2009 DSMAC), and the new DSMAC began recovering 2010 costs leaving 2009 costs unrecovered. Decision No. 71460 (January 26, 2010) requires APS to recover one-third of all unrecovered 2009 costs each year over the three years of 2010, 2011, and 2012 without interest.

2011 will be the second of three transition years to the new forward-looking DSMAC. Therefore, the DSMAC for 2011 will recover the projected costs for 2011 (less $10 million recovered in base rates), the second third of 2009 costs, and the true-up of 2007-2008 costs versus the DSMAC revenue recovered in 2009[8]. In addition, the DSMAC revenue requirements for 2011 reflect a credit of $118,000 for certain gains from the sale of APS property per the Commission's action of May 26, 2010, and recovery of $359,100 of 2007-2008 DSMAC costs that were not recovered in 2009-2010. The latter was primarily due to a one month delay in the implementation of the 2009 DSMAC. The 2011 DSM budget and revenue requirements for the DSMAC are summarized below.

| **2011 DSM Budget** | |
|---|---|
| | |
| Total Energy Efficiency (*with incentive*) | 68,258,000 |
| Demand Response | 10,620,000 |
| ***Total 2011 DSM Budget*** | **$ 78,878,000** |
| | |
| **2011 Revenue Requirements for DSMAC** | |
| | |
| Total 2011 DSM Budget | $ 78,878,000 |
| Plus: 2009 Budget Carryover to 2011 (1/3) | 5,332,979 |
| Minus: Amount Recovered in Base Rates | (10,000,000) |
| ***Subtotal*** | **$ 74,210,979** |
| | |
| Minus: Credit for Gains from Asset Sales | (118,000) |
| Plus: Recovery of Under Recovered True-up Balance for 2007/2008 Costs | 359,100 |
| ***Total Revenue Requirement for DSMAC – March 2011*** | **$ 74,452,079** |

These items are set forth with additional detail in Table 6 of the 2011 Plan.

[8] APS references 2007 because there was an under collection of 2005-2007 EE costs ($3.2 million) that APS partially offset with gains on the sale of property and then carried over as part of its recoverable 2008 EE costs. *See* Decision No. 70295 (April 24, 2008).

Attachment 3 to the 2011 Plan contains all the preliminary schedules supporting the DSMAC proposed to be effective in March 2011 and the corresponding customer charges necessary to recover the projected energy efficiency and DR costs. The recovery of proposed revenue requirements will result in an increase in the DSMAC charges as follows:

| | Current Charges | Preliminary Proposed |
|---|---|---|
| | | |
| Per kWh | $ 0.001646 | $ 0.002682 |
| Per kW | $ 0.720083 | $ 0.956 |

The estimated 2011 DSMAC charges of $0.002682 per kWh and $0.956 per kW, are comparable to the present charges of $0.001646 per kWh and $0.720083 per kW. The bill impact is anticipated to be less than 1% for all customer classes. APS is not asking the Commission to approve the specific charges for the DSMAC until later this year because the estimated cost of the 2011 programs will likely change slightly between now and final approval. Also, large APS customers with annual usage in excess of 40,000 MWh are eligible for self-direction of their DSM contribution to their own EE projects. APS is proposing changes to the DSMAC tariff regarding Self Direction consistent with the Settlement Agreement. APS will provide an update of the final amount of the DSMAC requested for approval in its supplemental filings. APS requests that the final DSMAC be approved concurrent with final approval of the 2011 Plan, which the Company requests by the beginning of December 2010 so that all Plan components can be implemented by the first quarter of 2011.

## IV. CONCLUSION

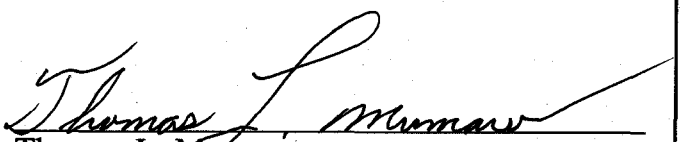
For the reasons stated herein, APS requests that the Commission approve no later than early in December of 2010:

1. the 2011 DSM Implementation Plan and budget, which includes the Company's proposed new programs, program enhancements, and expansions of existing programs as discussed herein and in Exhibit A hereto; and

2. a new DSMAC effective for the first billing cycle in March 2011 that will recover (1) the approved 2011 DSM Implementation Plan budget (less the

$118,000 credit for gains on the disposition of APS utility property ordered by the Commission on May 26, 2010); (2) the second third of previously unrecovered 2009 costs; and the $359,100 of unrecovered costs from the 2008 plan (which included a carryover of unrecovered 2007 plan costs per Decision No. 70295).

RESPECTFULLY SUBMITTED this 1st day of June, 2010.

By: 
Thomas L. Mumaw
Linda J. Arnold

Attorneys for Arizona Public Service Company

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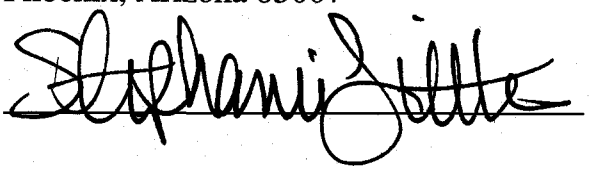
Phoenix, Arizona 85007



# Arizona Public Service Company

# Demand Side Management Implementation Plan for 2011

## June 1, 2010

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# I. Introduction

Arizona Public Service Company ("APS" or "Company") makes this Application in compliance with the Demand Side Management ("DSM") provisions contained in Decision No. 71448 (December 30, 2009). In Decision No. 71448, the Arizona Corporation Commission ("Commission") adopted the Proposed Settlement Agreement ("Settlement Agreement") in the Company's most recent rate case. The Settlement Agreement required APS to file an annual "Energy Efficiency Implementation Plan for 2010, 2011, and 2012." The attached 2011 Demand Side Management Implementation Plan ("2011 Plan") meets the energy efficiency ("EE") requirements of the Settlement Agreement.

This 2011 Plan was developed and enhanced with input from the DSM Collaborative which is comprised of energy efficiency experts and stakeholder representatives including members of the Commission Staff, the Residential Utility Consumer Office ("RUCO"), Southwest Energy Efficiency Project ("SWEEP"), Western Resource Advocates ("WRA"), the Department of Commerce Energy Office, Arizonans for Electric Choice and Competition ("AECC"), and others. The DSM Collaborative discussed this 2011 Plan prior to this filing. The 2011 Plan targets an annual DSM energy savings goal of 391,000 megawatt hours ("MWh") with a corresponding estimated budget of $79 million. The 2011 Plan also includes estimates of demand savings, energy savings, a societal net benefits projection for the EE programs, and an estimate of the EE performance incentive.

The 2011 Plan proposes 1) the continuation of existing EE and Demand Response ("DR") programs with key additions and enhancements, 2) the addition of new EE programs and measures, and 3) a new budget for 2011 which will be funded through the Demand Side Management Adjustment Charge ("DSMAC").

Outlined below are the specific program elements for which APS is asking for Commission approval to change, expand, or add new features in this 2011 Plan Application:

Program Enhancements

***Existing Residential Programs***

- *Consumer Products*
- *Appliance Recycling*
- *Low Income Bill Assistance*

***Existing Non-Residential Programs***

- *Customer Caps*
- *Measure Cap*
- *Direct Install*
- *Financing*

New Programs and Program Measures

**New Residential Programs**

- *New Residential Conservation Behavior Pilot Program*
- *Multi-Family Homes Program*
- *Shade Tree Pilot Program*

**New Residential Program Measures**

- *HVAC Diagnostics*
- *Room Pressure Relief*

**New Non-Residential Measures (Prescriptive)**

- *Controls*
- *Lighting*
- *HVAC*
- *Building Envelope*
- *IT Data Center Controls*
- *Refrigeration*
- *Motor Rewind*
- *Heat Pump Water Heaters*
- *Direct Install – Lighting*

**Other Non-Residential**

- *Bid for Efficiency*

Estimated Savings Results

The proposed 2011 DSM Program Portfolio for 2011 is targeted to save an annual 391,000 MWh of energy which is equivalent to the goal of achieving savings of to 1.25% of total energy resources in 2011. APS expects to meet the DSM energy savings goal of 391,000 MWh by achieving 352,000 MWh of savings from EE programs and 39,000 MWh of savings from DR programs. By meeting this annual goal, APS estimates peak demand saving of 68 megawatts ("MW") from EE and 77.5 MW from DR in 2011, while saving an estimated 3,683,000 MWh over the lifetime of the measures installed in 2011.

By implementing the 2011 EE portion of the DSM Plan, APS expects to spend an estimated $68 million in 2011, but produce $125 million of net benefits to customers. APS believes all of the proposed programs and measures are cost effective (as measured by the Societal Cost Test) and will provide all APS customers with significantly increased opportunities to save on their monthly electric bills.

Supplemental Filings

To allow APS sufficient time to develop all of the specific program details necessary to be in compliance with the cost-effectiveness test requirement for proposed new programs and measures, and in anticipation of the sequential manner in which Staff expects to conduct the

cost-effectiveness analysis for each program[1], APS will update and expand the information provided on certain EE programs and measures for 2011 using a staggered timeline for such supplemental filings.

The purpose of the supplemental filings is to provide additional detail on the proposed new programs and measures, which will allow the Commission Staff to conduct a benefit/cost analysis on each proposed new program and measure. Each supplemental filing will also contain updated estimates of program budgets and MWh savings.

APS's supplemental 2011 Plan filings will be provided on or before the following dates:

- July 1, 2010 – New Non-residential measures and budget/savings updates
- August 2, 2010 – New Residential programs and measures and budget/savings updates
- August 15, 2010 – New Multi-Family program and budget/savings update

Timing of Commission Approval

APS anticipates Commission approval of this 2011 Plan (in its entirety and with its corresponding budget) no later than early December 2010. However, approval of program enhancements and proposed new programs/measures between August and November would allow APS to have those new elements ready for customer participation at the beginning of 2011. The participation levels, savings estimates, and 2011 program budgets are premised on complete program availability on January 1, 2011.

[1] APS's filing timeframes were reviewed and found acceptable by Commission Staff.

# II. Energy Efficiency Portfolio

APS proposes to continue operation of its current EE programs and to expand its current DSM portfolio of EE programs that reduce the use of electricity by means of energy efficient products, services and practices. The programs are designed to influence energy decisions by Residential and Non-residential customers and other market players through a combination of rebates and incentives, technical assistance and training, and consumer education. With the exception of the proposed new programs and measures described in this 2011 Plan, APS's energy efficiency programs, features and measures are described in the Commission Decisions and filings summarized in Attachment 1.

The EE programs in this 2011 Plan are expected to produce cost effective long-term energy consumption and demand savings. For programs implemented in 2011, the program cost is estimated to be 1.9 cents per lifetime kWh saved (total estimated program dollars divided by the total estimated kWh saved over the expected lifetime of all measures installed in 2011). Table 2 summarizes the estimated energy and demand savings and total program net benefits as a result of proposed program activities in 2011. These benefits will be in addition to the benefits already achieved by programs from 2005 through 2010, which are not included in the estimated impacts in Table 2. For 2011, the APS energy efficiency programs are estimated to save approximately 68 MW of demand and 3.7 million lifetime MWh of energy. For more detail on the savings and net benefits achieved prior to 2011, see the Company's Demand Side Management Semi-Annual Progress Report ("Semi-Annual Report") filings.

**Table 2**
**2011 Energy Efficiency Goals**

| Program Budget | Annual Savings MWh | Lifetime MWh Savings[1] | Peak Demand Savings MW | Total Net Benefits[2] |
|---|---|---|---|---|
| **$68,258,000** | **352,000** | **3,683,000** | **68.2** | **$124.8 Million** |

[1] *Refers to savings over the expected lifetime of all program measures installed in 2011.*
[2] *The Total Net Benefits estimate incorporates savings over the expected lifetime of all program measures installed in 2011 and all program costs including the cost of Measurement, Evaluation & Research and the Performance Incentive. Total Net Benefits are the difference between the present value of the societal benefits and the present value of the societal costs.*

APS's program portfolio continues to include a balanced mix of programs targeted to address APS's diverse customer segments and market opportunities including: Residential Consumer Products; Residential Existing Homes; Residential New Construction; Appliance Recycling; Residential Low Income; Non-residential Existing Buildings; Non-residential New Construction and Renovation; Small Businesses; Schools; and Non-residential Energy Information Services.

In order to achieve the targeted annual savings of 352,000 MWh from EE programs in 2011, a number of new programs or program enhancements and revised program features are proposed to be added to the 2011 program offerings. These are summarized in Table 3.

## Table 3
## DSM 2011 Implementation Plan
## Schedule of Supplemental Information Filings
## for Staff and Commission Consideration

| | Filings | Information Completion Dates[1] | | | |
|---|---|---|---|---|---|
| | | Jun 1, 2010 | Jul 1, 2010 | Aug 2, 2010 | Aug 16, 2010 |
| **Enhancements to Existing Programs** | | | | | |
| | **Residential** | | | | |
| 1 | Consumer Products – CFL Bulb "Giveaway" | X | | | |
| 2 | Appliance Recycling – Commercial Accounts Eligible | X | | | |
| 3 | Low Income – Crisis Bill Assistance | X | | | |
| | **Non-Residential** | | | | |
| 5 | Adjust Customer Caps | X | | | |
| 6 | Adjust Measure Caps | X | | | |
| 7 | Modify Direct Install | X | | | |
| 8 | Financing Available to All Non-residential Customers | X | | | |
| | | | | | |
| **New Programs -- Residential** | | | | | |
| 1 | Conservation Behavior Pilot Program | X | | | |
| 2 | Multi-Family Homes Program | | | | X |
| 3 | Shade Tree Pilot Program | | | X | |
| | | | | | |
| **New Measures** | | | | | |
| | **Residential – Existing Homes Program** | | | | |
| 1 | HVAC Diagnostics | | | X | |
| 2 | Room Pressure Relief – Home Performance with ENERGY STAR | | | X | |
| | | | | | |
| | **Non-Residential Prescriptive Measures** | | | | |
| 3 | Controls (4 New Measures) | | X | | |
| 4 | Lighting (3 New Measures) | | X | | |
| 5 | HVAC ( New Measure) | | X | | |
| 6 | Building Envelope (1 New Measure) | | X | | |
| 7 | IT Data Centers (1 New Measure) | | X | | |
| 8 | Refrigeration (4 New Measures) | | X | | |
| 9 | Motor Rewind (1 New Measure) | | X | | |
| 10 | Heat Pump Water Heaters (1 New Measure) | | X | | |
| 11 | Direct Install – Lighting (1 New Measure) | | X | | |
| | | | | | |
| 12 | Non-Residential – Bid for Efficiency | | X | | |

[1]All filings will be provided on or before the dates identified in this table.

Following is a brief description of the new programs/measures or program enhancements, proposed to be added to the 2011 program offerings in this DSM Plan:

## A. Program Enhancements

APS is requesting approval of several specific program enhancements which are believed to improve the current EE programs and to increase the ability to meet the energy savings goal. These proposed enhancements are changes to existing programs and, therefore, do not require a cost effectiveness test. The requested enhancements are outlined below:

### 1. Existing Residential Programs.

- *Consumer Products:* Increase the annual limit on the number of free "giveaway" compact fluorescent light bulbs ("CFLs") from 30,000 CFLs to 150,000 CFLs annually.
- *Appliance Recycling:* Add commercial customer accounts to the Appliance Recycling program. This program will allow commercial customers free pickup service if their recycled refrigerators or freezers are in working condition, between 10 and 30 cubic feet, and meet existing eligibility requirements.
- *Low Income Bill Assistance:* The Crisis Bill Assistance agencies would be expanded beyond those included in a prior decision issued by the Commission APS proposes the Arizona Community Action Association vet and monitor new agencies that would participate in the distribution of bill assistance funds, as well as determine the allocation of funds.

### 2. Existing Non-Residential Programs.

- *Customer Caps:* Adjust the customer caps for the Large Existing and the New Construction programs from $300,000 per calendar year to $1 million per calendar year. For all Non-residential programs APS proposes that once a customer reaches the cap, all electric savings beyond this value will be paid at 50% of the current listed incentive amount.
- *Measure Caps:* Increase the caps for Custom measures and Retro-Commissioning measures from 50% to 75% of incremental costs to be consistent with the prescriptive measure caps.
- *Direct Install:* Apply Direct Install on a 400 kW or less facility size basis, which would allow more customers to participate in the Direct Install family of measures.
- *Financing:* Expand the financing option to all customers who wish to finance their EE projects and pay back financing with their energy savings.

## B. New Programs and Program Measures

APS is also proposing approval of entirely new programs or new program measures, as follows:

1. **New Residential Programs**
   - *New Residential Conservation Behavior Pilot Program:* Drives customer conservation behavior by providing participating residential customers with periodic reports that show how a customer's home compares with similar homes along with recommendations for specific actions that the household can take to save energy.
   - *Multi-Family Homes Program:* Takes a two track approach to address the multi-family market through, 1) a direct install component that will provide simple energy savings measures at no cost as well as direct property managers toward other APS rebate programs, and 2) a per unit incentive for energy efficient new construction and major rehabilitation projects.
   - *Shade Tree Pilot Program:* Administered in partnership with a local non-profit agency, provides education and incentives for customers to plant desert adapted shade trees that will provide shade to the customer's residence.

2. **New Residential Program Measures**
   - *HVAC Diagnostics*: Provides financial incentives to customers for having their HVAC system tuned-up so that it runs more efficiently. The tune-up includes a correction of the refrigerant charge, condenser coil cleaning, and an airflow correction.
   - *Room Pressure Relief:* Offers customers an incentive to help correct room pressure imbalance issues making their home more efficient and, in some cases, safer.

3. **New Non-Residential Measures (Prescriptive)**
   - *Controls:* Provides devices to sense need and control ventilation fans, HVAC equipment, and other electric loads in parking garages, hotels and other conditioned space.
   - *Lighting:* Promotes LED signs and traffic signals and upgrades to premium T8 fluorescent lamps.
   - *HVAC:* Promotes the use of cooling towers to make air-cooled HVAC equipment more efficient.
   - *Building Envelope*: Provides incentives to customers to install either window film or window screens to cut down the heat load on their buildings.
   - *IT Data Center Controls:* Provides a means to maintain and turn off office computers remotely by customer personnel.
   - *Refrigeration:* Promote efficient condensers, automatic door closers, efficient compressors, head pressure control devices.
   - *Motor Rewind*: Improves motor efficiency through a repair process that rewinds the motor.
   - *Heat Pump Water Heaters:* Promotes water heaters that are two to three times more efficient than standard electric resistance water heaters.

- *Direct Install – Lighting:* Adds one additional measure to this family of measures - T8 to Premium T8 replacement.

### 4. Other Non-Residential

*Bid for Efficiency:* Allows customers or trade allies to bid competitively for program incentives within a broad range of kWh savings guidelines.

The next two sections (III and IV) provide a brief overview of the 13 energy efficiency programs that make up the entire proposed energy efficiency portfolio for 2011. Section III describes the Residential programs and Section IV describes the Non-residential programs. Section V describes the DR and Load Management programs. Section VI outlines the 2011 budget; Section VII presents the programs' energy savings and benefits; Section VIII presents the programs' environmental benefits; and Section IX describes the Measurement, Evaluation, and Research ("MER") process.

# III. Residential Programs

This section contains a discussion of the following currently operating Residential EE programs:

1) Consumer Products Program
2) Existing Homes Program
3) New Construction Program
4) Appliance Recycling Program
5) Low Income Weatherization Program

For each of these programs, the discussion will include: an Existing Program Description, Proposed Program Enhancements for 2011, and Proposed New Measures for 2011.

Finally, this section introduces the follow proposed new programs:

1) Conservation Behavior Pilot Program
2) Multi-Family Homes Program
3) Shade Tree Pilot Program

## *A. CURRENT RESIDENTIAL PROGRAMS*

### 1. Consumer Products Program

#### *a. Existing Program Description*

The primary target market for the Consumer Products program is APS residential customers who are contemplating purchase of lighting and other energy using products for their homes. This program is being implemented through participating retailers within the APS service territory.

This current program promotes high-efficiency Environmental Protection Agency ("EPA")/Department of Energy ("DOE") ENERGY STAR® approved lighting. The program solicits discount pricing from CFL manufacturers and distribution of CFLs through local retailers. Customers are referred to participating retailers to purchase qualifying products. Discount pricing is passed on to consumers through a negotiated agreement with lighting manufacturers and retailers. The program provides sales training for participating retailers and consumer education, including in-store point-of-sale displays.

In January 2010, the Commission approved three new measures for the Consumer Products program that are designed to improve the energy efficiency of residential swimming pools. Variable speed and dual speed pool pumps with energy efficient motors that can save over 1,000 kWh annually, while maintaining or improving pool cleanliness, are now available. The measure provides incentives to consumers, retailers, and installers to help overcome the higher initial cost of these pumps and to promote their increased adoption in the market place. In addition, a new type of smart digital pool pump timer is now available. It works with existing pool pumps as a replacement for mechanical timers and it provides significant savings by automatically adjusting pool pump run times monthly to automatically reduce use

in cooler months, while maintaining pool cleanliness. APS provides consumers an instant rebate to encourage purchase and use of these energy saving timers.

***b. Proposed Program Enhancements for 2011***

APS proposes to increase the annual limit on the number of free "giveaway" CFL bulbs from 30,000 CFLs to 150,000 CFLs annually. The purpose of the giveaway CFL bulbs is to increase awareness of CFLs, educate customers on the benefits of CFLs and other opportunities for saving energy, promote the Company's DSM and renewable energy programs, and to help customers save energy.

There are two reasons why APS is requesting an increase in the annual limit of giveaway bulbs. First, the number of community events in which APS is involved to promote energy efficiency programs has expanded dramatically. APS has found that one of the best ways to engage customers in DSM is through direct customer contact at home shows, community events, trade shows, and other public events. So APS has continually increased the number and scope of events from less than ten events in 2005 to approximately 150 events anticipated in 2011. Giveaway CFLs provide an opportunity for APS to attract customer traffic and engage customers in conversations about the best ways to save energy and how to take advantage of APS's rebate programs. In fact, the CFLs are packaged in boxes that include information about APS's other EE and renewable energy rebate programs. As the number of events has dramatically increased, it has led to the need for more outreach giveaway bulbs. APS estimates that approximately 75,000 CFLs would be needed in 2011 to support the planned community events.

In addition to promoting and giving away CFL bulbs at events, APS proposes an additional channel for outreach CFLs. APS has piloted a program to provide free outreach CFLs to local charitable organizations and non-profit community groups. These groups use an online bulb donation form to request CFLs. APS requires that the organizations document the mission of their organization or event, how they will use the outreach bulbs to benefit APS customers, and how they will help educate customers and promote APS EE programs. The CFL donations provide an excellent opportunity to assist non-profit organizations and enlist them as ambassadors to help spread the word about APS programs. They provide cost effective savings as well as a channel for engaging the community in energy efficiency. APS proposes that approximately 75,000 CFLs be made available for donations to qualifying organizations in 2011. At a limit of 1,000 bulbs per request, APS would be able to support at least 75 donation requests in 2011. All organizations receiving a CFL donation will be required to submit a report to APS to document their event or outreach activity, how bulbs were distributed, and other pertinent information.

***c. Proposed New Measures for 2011***

No new measures are being proposed for the Consumer Products program at this time.

## 2. Existing Homes Program – HVAC and Home Performance

The Existing Homes Program is divided into two distinct components, 1) HVAC measures and 2) Home Performance with ENERGY STAR® ("HPES") measures.

The Residential Existing Homes Program Heating, Ventilation, and Air Conditioning ("Residential HVAC") component uses a combination of financial incentives, contractor training and consumer education to promote the proper installation and maintenance of energy efficient HVAC systems.. The Air Conditioner ("AC") Rebate and Duct Test and Repair portions of the program include measures supporting energy efficient residential air conditioning and heating systems along with the proper installation, maintenance and repair of these systems.

The HPES component of the program promotes a whole house approach to energy efficiency by offering incentives for improvements to the building envelope of existing residential homes with the APS service territory. It includes measures to improve the EE of the home such as air sealing, insulation, shade screens, faucet aerators, and low flow showerheads. Both components of the Existing Homes Program also provide APS customers with referrals to contractors who meet strict program requirements for professional standards, technician training, and customer satisfaction.

The two components of the Residential Existing Homes program are discussed individually below:

***a. Existing Program Description – HVAC***

The AC Rebate with Quality Installation measures builds on the existing APS Qualified Contractor program. APS offers financial incentives to homeowners for buying energy efficiency equipment (≥13 SEER/10.8 EER), that is installed in such a manner that it meets the program requirements for air flow, refrigerant charge and sizing. The Duct Test and Repair measure provides financial incentives to customers for having their HVAC system's duct work tested for leakage and repaired.

***b. Proposed Program Enhancements for 2011 – HVAC***

APS is not proposing any enhancements to the HVAC component of its Residential Existing Homes program at this time.

***c. Proposed New Measures for 2011 – HVAC***

APS is evaluating a Residential HVAC Diagnostics measure for the AC Rebate section of the Residential HVAC component that would provide its customers a financial incentive to have their existing AC unit or heat pump tuned up so that it runs more efficiently. The tune up would include a correction of the refrigerant charge, leak repair if necessary, condenser coil cleaning, and airflow correction. These activities would be verified on-site during the tune-up with a diagnostic system that records the equipment status before and after the work is done. Similar programs have been run in California and Nevada with success. Due to the climate similarities, the Company is using those programs as the preliminary model for a potential program for APS. **APS will include details of this new measure in the August 2, 2010, update to this 2011 Plan.**

***d. Existing Program Description – Home Performance with ENERGY STAR®***

The HPES component of the Residential Existing Homes program utilizes certified contractors that will perform a detailed checkup on a customer's home to diagnose energy

inefficiencies. The HPES checkup provides the customer with a comprehensive list of potential improvements that would make their home more energy efficient. The customer has the option of selecting the improvements, if any, that they will make to their home at the current time. The cost of the checkup to the customer is $99 and it includes ten CFLs, three faucet aerators and one low flow showerhead in addition to the evaluation and EE recommendations for the home. The contractor that completes a HPES checkup receives a $200 incentive from APS once they submit the checkup documentation and it is accepted by APS. Contractor's normally charge customers approximately $400 for similar in-home checkups.

The HPES program also provides several incentives that are the main components of this program:

1. Duct Test and Repair, 75% of job cost up to a maximum of $250
2. Air Sealing, 75% of job cost up to a maximum of $250
3. Shade Screens, 75% of job cost up to a maximum of $250
4. Insulation with Air Sealing, 75% of job cost up to a maximum of $500

Customers also have access to other APS Residential incentive measures such as Consumer Products or Appliance Recycling, and these measures are also recommended when appropriate as part of the checkup.

#### *e. Proposed Program Enhancements for 2011 – Home Performance with ENERGY STAR®*

On February 26, 2010, APS filed an Application[2] to offer APS customers financing assistance for EE upgrades recommended by the HPES checkup. The request is currently pending before the Commission.

#### *f. Proposed New Measures for 2011 – Home Performance with ENERGY STAR®*

APS is evaluating the addition of a Room Pressure Relief measure to the incentives available through the HPES checkup. Excessive air pressure in a given room creates problems with the home's HVAC system and combustion appliances. Room pressure issues often increase the HVAC system's run time which wastes energy and can make part of the home less comfortable. It is also possible for room pressure problems to cause back draft situations on gas water heaters or other combustion appliances. This is a safety concern that should be corrected whenever it is identified. This measure would offer customers an incentive to help correct these issues making their home more efficient and in some cases, safer. **APS will include details of this new measure in the August 2, 2010, update to this 2011 Plan.**

## 3. New Construction Program

#### *a. Existing Program Description*

This program promotes high efficiency construction practices for new homes. It offers incentives to builders that meet program EE standards in order to increase the penetration of

[2] Docket No. E-01345A-08-0172.

high efficiency homes. The program emphasizes the "whole building" approach to improving energy efficiency and includes field testing of homes to ensure performance. Participating builders are trained to apply building science principles to assure that high-efficiency homes also have superior comfort and performance. The program also provides education for prospective homebuyers about the benefits of choosing an energy efficient home and the features to consider.

In 2010, APS added a new higher performance program measure that offers builders a higher incentive to meet significantly higher efficiency levels, with homes required to be at least 30% more efficient than current code. When combined with APS incentives for renewable energy, this program measure is designed to move the new homes market toward net zero energy consumption in the future.

***b. Proposed Program Enhancements for 2011***

No program enhancements are being proposed for the Residential New Construction program at this time.

***c. Proposed New Measures for 2011***

No new measures are being proposed for the Residential New Construction program at this time.

## 4. Appliance Recycling Program

***a. Existing Program Description***

The Appliance Recycling Program targets the removal of functional second refrigerators and freezers in households. The average household replaces a refrigerator every ten (10) years. However, many of the refrigerators and freezers being replaced are still functioning and often remain in the home as underutilized energy-consuming backup appliances in garages and basements. APS offers a $30 rebate with free pick-up and recycling of operable second refrigerators or freezers to encourage recycling these older, inefficient appliances. APS estimates volume for the Appliance Recycling program in 2011 will be 10,500 units recycled.

***b. Proposed Program Enhancements for 2011***

APS is proposing to add commercial accounts to the Appliance Recycling program with free pickup service for refrigerators or freezers in working condition, sized between 10-30 cubic feet and meeting existing eligibility requirements.

***c. Proposed New Measures for 2011***

No new measures are being proposed for the Appliance Recycling program at this time.

## 5. Low Income Weatherization Program

***a. Existing Program Description***

APS's Energy Wise Low Income Weatherization Program is designed to improve the energy efficiency, safety, and health attributes of homes occupied by customers whose income falls

within 200% of the Federal Poverty Guidelines ("FPG"). The weatherization component of this program serves low income customers with various home improvement measures, including cooling system repair and replacement, insulation, sunscreens, water heaters, window repairs and improvements, as well as other general household repairs. In addition, there is a Crisis Bill Assistance component serving customers whose income falls below 150% of the FPG. These programs elements are administered by various community action agencies throughout APS's service territory.

***b. Proposed Program Enhancements for 2011***

Crisis Bill Assistance is an important component that serves a large number of customers. However, the list of agencies delivering these services was specifically set forth in by Commission Decision No. 68647, April 12, 2006, thus arguably limiting the number of distribution channels available. After some discussion with the Arizona Community Action Association ("ACAA"), a new model has been developed that would allow ACAA to vet and monitor new agencies to participate in the distribution of bill assistance funds. ACAA would also be in charge of determining the allocation of funds.

***c. Proposed New Measures for 2011***

No new measures are being contemplated for the Low Income Weatherization program at this time.

## *B. PROPOSED NEW RESIDENTIAL PROGRAMS*

### 1. Residential Conservation Behavior Pilot Program

The Residential Conservation Behavior Pilot program will provide participating residential customers with periodic reports (up to 12 reports per year) with information designed to help motivate them to change their energy usage behavior to save energy.

To drive conservation behavior, this program will provide reports that show how a customer's home compares with similar homes including recommendations for specific actions that the household can take to save energy. Reports will be mailed to customers, and participants will also be encouraged to access a program web portal for more information.

In addition to providing targeted educational messages about the best strategies for saving energy, the program will use a method based on the science of normative modeling to motivate conservation behavior. By comparing use to others, including the "most efficient" neighbors, and showing specific actions that others took to save energy, the program provides a benchmark for customers to achieve and instills a sense of competition to produce sustained conservation behaviors.

For more details of the proposed Residential Conservation Pilot Behavior program, see Attachment 2.

## 2. Multi-Family Energy Efficiency Program

The Multi-Family Energy Efficiency Program ("MEEP") is a proposed new addition to the APS DSM Portfolio for 2011. The program will target multi-family properties and dormitories. This market segment typically and historically has been unable to participate in existing APS EE programs because property owners are unable to benefit from the energy savings generated. In most cases, the property owner/manager does not pay for tenant energy costs and is thus not motivated to improve the energy efficiency of their property. This program is designed to reach this targeted segment.

The MEEP will take a two track approach to address the many challenges in reaching the multi-family market. The first track includes a direct install component that will provide simple energy savings measures at no cost to the landlord, property manager, or customer. This approach will provide an opportunity to introduce energy efficiency to that community and direct property managers toward additional rebates available through the Non-residential Solutions for Business program to address common areas.

The second track will include a per unit incentive for new construction and major rehabilitation projects. Building on the success of the APS ENERGY STAR® Homes Program, these incentives will encourage builders and developers to build projects that exceed standard building code construction.

The desired outcome in the implementation of a multi-family program is to realize long-term energy savings for the rental community and to improve the standard by which multi-family structures are built and maintained. **APS will provide additional detailed information about the proposed MEEP program in the August 16, 2010 supplemental update to this Implementation Plan**

## 3. Shade Tree Pilot Program

APS is proposing to conduct a shade tree pilot program in 2011 in partnership with a local non-profit agency, similar to *Trees for Tucson.* Through this agency, APS will host tree planting workshops throughout the Phoenix-metro area that will educate customers on successful tree care techniques and create home-specific planting maps using Google Earth to ensure proper tree location.

By participating in a tree planting workshop, APS customers will be eligible to receive incentives for desert adapted shade trees. The goal of this program will be to encourage customers, through education and incentives, to plant shade trees in areas near their homes so that the energy used to cool their homes will be reduced. **APS will provide additional detailed information about the proposed Shade Tree Pilot Program in the August 2, 2010 supplemental update to this Implementation Plan.**

# IV. Non-Residential Programs

This section contains a discussion of the following Non-residential EE programs, which exist under the marketing umbrella program called Solutions for Business:

1) Large Existing Facilities Program
2) New Construction Program
3) Small Business Program
4) Schools Program
5) Energy Information Services Program

This section provides a discussion of:

A) Each existing program
B) Proposed Non-residential program enhancements for 2011
C) Proposed new measures for 2011 (APS will file details regarding these new measures on or before July 1st.)

## *A. CURRENT NON-RESIDENTIAL PROGRAMS*

The five current Non-residential EE programs are marketed under the APS Solutions for Business program name. A description of each of the Non-residential programs follows:

### 1. Large Existing Facilities Program

The primary targets for the Non-residential Existing Facilities program are customers who have an aggregated monthly demand greater than 100 kW. This program provides prescriptive incentives to owners and operators of large Non-residential facilities for EE improvements in lighting, HVAC, motors, building envelope, and refrigeration measures. Custom incentives are also provided for EE measures not covered by the prescriptive incentives. Incentives are also provided to customers who conduct qualifying energy studies. The largest customers (electric usage $\geq$ 40,000 MWh per year) may qualify to self direct the amount they pay toward DSM funds (base + adjustor) for their own EE projects. Government customers may also qualify to receive program financing for their EE projects.

### 2. New Construction Program

This program includes three components: design assistance; prescriptive measures; and custom efficiency measures. Design assistance involves efforts to integrate energy-efficiency into a customer's design process to influence equipment/systems selection and specification as early in the design process as possible. Prescriptive incentives are available for energy efficiency improvements in lighting, HVAC, motors, building envelope, and refrigeration applications. Whole Building Design is a component within the New Construction custom efficiency measures that influences customers, developers, and design professionals to design, build and invest in higher performing buildings through a stepped performance incentive structure with the financial incentives becoming larger as the building performance improves. The APS Whole Building Design incentives are designed to complement the Leadership in Energy and Environmental Design green building certification system which was developed by the United States Green Building Council.

### 3. Small Business Program

The primary targets for the Small Business Program are customers that have a maximum peak aggregated demand of 100 kW or less. This program provides prescriptive incentives to small business owners for EE improvements in lighting, HVAC, motors, building envelope, and refrigeration applications through a simple and straightforward mechanism. In addition, a customer in the Small Business Program may participate in the Direct Install (Direct Install can pay up to 90% of project cost) family of measures in the areas of lighting and refrigeration and may also qualify to receive program financing for their EE projects. Small Business customers are also eligible to receive incentives for energy studies and custom efficiency measures.

### 4. Schools Program

This program is designed to set aside funding for public school buildings, including charter schools, to participate in the APS Solution for Business programs. This program budget is reserved exclusively for school use. If schools fully subscribe this program budget or if they reach their incentive cap of $100,000 per year under this program, they may still participate in other Non-residential APS programs. EE incentives are the same as the Large Existing Facilities (for existing school facilities) and New Construction (for new school construction and major renovations). In addition, any size school may participate in the Direct Install measure incentives and may also qualify to receive program financing for their EE projects. In addition to this, schools may be qualified to receive federal funds for EE projects in coming years. APS will continue to work to integrate the EE program incentives with federal grants for schools.

### 5. Energy Information Services Program

The Energy Information Services ("EIS") program provides 15-minute interval electric usage data to large Non-residential customers through a web-based energy information tool. This tool provides users with information that can be used to improve or monitor energy usage patterns, reduce energy use, reduce demands during on-peak periods, and to better manage their overall energy operations.

## *B. PROPOSED NON-RESIDENTIAL PROGRAM ENHANCEMENTS*

### 1. Adjust Customer Caps

Non-residential customer caps for both the Large Existing program and the New Construction program are currently set at $300,000 per customer per year based on the customers aggregated load (i.e. all of a large customer's accounts). The Small Business customer cap is currently set at $150,000 per calendar year. These caps were set in the early days of the program (2005) when the total EE budget was $16 million per year. The purpose of these caps was to insure that no single customer would use a majority of the budgeted incentive funds. The total EE portion of the 2011 Plan budget is now $68 million. In addition, many schools and state and municipal customers are now considering large multi-million dollar EE projects through participation in funds available from the federal American Recovery and Reinvestment Act ("ARRA").

In order to keep the program relevant to customers and to retain their interest in considering energy efficiency in their plans, APS recommends the following:

- Increase the customer cap from $300,000 per calendar year to $1 million per calendar year for the Large Existing and the New Construction programs.
- Maintain the Schools customer cap at $100,000. Schools have the opportunity to also participate in the other Non-residential programs. For example, a school's total incentive cap for an existing facility EE project will be $1.1 million ($100,000 through the Schools program plus $1 million through the Large Existing program).
- Once a customer reaches the cap, all electric savings beyond this value will be paid at 50% of the current listed incentive amount.

With these changes, all programs will continue to deliver positive net benefits to society with a societal benefit/cost ratio greater than 1.0.

### 2. Adjust Measure Caps

Measure caps for both Custom measures and Retro-commissioning are currently set at 50% of incremental cost. Both of these measures deliver valuable kWh savings, but qualify for limited incentives (50% of incremental cost) compared to prescriptive measures (75% of incremental cost). In order to attract more customer participation in both of these measures, APS now recommends increasing the caps on these measures to 75% of incremental cost. All measures would still need to continue to deliver positive net benefits to society with a societal benefit/cost ratio greater than 1.0.

### 3. Direct Install

APS requests that the Direct Install family of measures be made available to all customers with facilities with a maximum peak demand of 400 kW or less. This change would allow customer facilities up to 400 kW to participate in the Direct Install family of measures. The change will ultimately increase customer program participation and increase annual kWh.

### 4. Make Financing Available to All Non-Residential Customers

Expand the financing option to all Non-residential customers who wish to finance their EE projects and pay back the financing with their energy savings, rather than restricting it to Small Businesses, Governmental Accounts, and Schools.

## *C. PROPOSED NEW NON-RESIDENTIAL MEASURES FOR 2011*

To help APS achieve its savings goals for 2011, the Non-residential programs will rely not only on existing EE measures, but will also need to add additional measures to meet these growing goals. The new measures will be in the area of both prescriptive measures and a new bid for kWh measure. **APS will provide additional detailed information about these proposed measures in the July 1, 2010 supplemental update to this Implementation Plan**. The July 1, 2010 filing will contain updated estimates of program budgets and MWh savings. All suggested measures will have a benefit/cost ratio greater than 1.0. The measures being considered for inclusion in this future update include:

**Prescriptive Measures**

1. Controls
   a. CO Sensors – controls ventilation fans in parking garages
   b. CO2 Sensors – controls outside air ventilation for conditioned spaces
   c. Hotel Room Controls – controls room temperature based upon occupancy
   d. Smart Strips – turns off equipment when not in use
2. Lighting
   a. LED Traffic Lights – specifically for red and green lights
   b. LED Channel Signs – advertising signage
   c. T8 to Premium T8 replacement – with fewer inefficient T12 fluorescent lamps to be replaced this measure will motivate customers to install the premium efficient T8 fluorescent lamps
3. HVAC – Cooling Tower Sub Cooling – making air cooled HVAC equipment more efficient by using a cooling tower
4. Building Envelope -Window Film/Screens – these new incentives will complement the high efficiency window rebate currently available in the APS Solutions for Business program. These new incentives will provide customers a choice to install either window film or window screens to cut down the heat load on their buildings.
5. IT/Data Centers - Computer Power Management – a means to maintain and turn off office computers remotely by company IT personnel
6. Refrigeration
   a. Efficient Condensers – high-efficiency condensers
   b. Automatic Door Closers – for walk-in refrigerators and freezers
   c. Efficient Compressors – high efficiency compressors
   d. Floating Head Pressure Control – take advantage of periods of low air temperature to reduce the amount of work by the refrigeration compressor
7. Energy Efficient Motor Rewind – many large motors (200 HP and greater) that fail are repaired through a process called motor rewind. This measure improves the quality control and ultimately the energy efficiency of these repaired motors.
8. Heat Pump Water Heaters – a device that is two to three times more efficient than standard electric resistance water heaters.
9. Direct Install – add T8 to Premium T8 replacement measure to this family of measures

**Bid for Efficiency** - This offering allows customers or trade allies to bid competitively for program incentives within broad program kWh savings guidelines. Likely participants include national chains, design firms, energy service companies, and engineering firms.

# V. Demand Response and Load Management Programs

APS's DR programs will be used to meet up to 10% of the energy savings requirement from EE programs during 2011. In addition, the costs of implementing and marketing these DR programs will be recovered through the DSMAC, along with the cost of implementing the EE programs. All of these DR programs have either been previously approved, ordered by the Commission, or are pending approval under a separate application.

APS's 2011 DR and Load Management programs that apply toward the DSM EE target consist of: (A) APS Peak Solutions$^{SM}$, (B) Critical Peak Pricing rates - General Service and Residential, (C) Residential Super Peak rate, (D) Time of Use rates, (E) Interruptible rate, and the (F) Home Energy Information Pilot program.

## *A. APS PEAK SOLUTIONS$^{SM}$ PROGRAM*

The APS Peak Solutions$^{SM}$ program was outlined in APS's Commercial and Industrial Load Management program application.[3] APS Peak Solutions$^{SM}$ is a Commercial and Industrial DR Program for APS's Yuma and Phoenix metropolitan customers utilizing direct load control and manual load reduction.

The program begins on June 1, 2010, and is available for the summer months (June through September) between 12:00 noon and 8:00 p.m. (Sunday – Saturday) daily. The program anticipates an initial year weekday load reduction of approximately 36 MW in 2010, 72 MW in 2011, and 100 MW in 2012 through 2024. After capacity factor adjustments, the delivered initial year load reduction is estimated to be 27 MW in 2010, 53 MW in 2011, and 74 MW in 2012 through 2024. Customers will have an option to be notified of an event either ten minutes or two hours prior to starting the Peak Solutions event. The customer is limited to being controlled for 80 event-hours during the season with about four to eight hours of testing.

## *B. CRITICAL PEAK PRICING RATES - GENERAL SERVICE AND RESIDENTIAL*

The new Critical Peak Pricing ("CPP") rates went into effect on January 1, 2010, for APS general service and residential customers.[4] The CPP program will be available initially for two years, through January 2012, to gather data on the effectiveness and acceptance of the program for the summer periods. In this 2011 Plan, APS is requesting that the costs for marketing these rates be recovered through the DSMAC in 2011.

Customers will pay a higher price for energy during a designated Peak Event Day in exchange for lower prices during other non-critical time periods. CPP events will take place during June through September, weekdays between 2 p.m. and 7 p.m. (Monday through Friday), excluding holidays. Customers will be notified of an event by telephone, e-mail or text message by 4:00 p.m. of the day prior to the CPP event. Peak Events are limited to 90 hours during the season. APS estimates the 2011 CPP load reduction to be approximately 3.6 MW.

[3] Approved by Commission in Decision No. 71104 (June 5, 2009).
[4] Approved by the Commission in Decision No. 71448 (December 30, 2009).

## *C. RESIDENTIAL SUPER PEAK RATE*

The new residential Super-Peak Pricing ("SPP") tariff rate went into effect on January 1, 2010.[5] In this 2011 Plan, APS is requesting that the 2011 costs for marketing these rates be recovered through the DSMAC.

The SPP periods are pre-determined and set forth in the rate schedule rather than communicated to the customer on a day-ahead basis as with the CPP. Participating customers will pay higher charges during the "Super-Peak" periods, but will pay lower charges during off-peak periods. The "Super-Peak" period is 3:00 p.m. to 6:00 p.m., Monday thru Friday during June, July, and August (excluding holidays). APS estimates the 2011 SPP load reduction to be approximately 0.6 MW.

## *D. TIME OF USE RATES*

Time of Use ("TOU") rates are designed 1) to reflect the time variation in the cost of producing electricity, to more accurately match those costs with the service being provided to the customer thereby encouraging efficient use of energy, and 2) to encourage customers to reduce consumption during peak hours or to shift energy usage to off-peak periods. In this 2011 Plan, APS is requesting that the costs for marketing these rates in excess of what is being recovered in base rates be recovered through the DSMAC in 2011.

APS currently offers four residential TOU rates in addition to the Super Peak rate discussed above. The "Series 1" rates, which have on-peak hours from 9 a.m. to 9 p.m., have been offered since 1982. In July 2006, APS introduced the "Series 2" TOU rates with a shorter on-peak period (12 noon to 7 p.m.), higher peak prices, and lower off-peak prices. The Company's objective is to emphasize the Series 2 rates because they offer customers a better opportunity and incentive to reduce usage during peak hours. Towards that end, the Series 1 rates were closed to new customers on January 1, 2010. APS is requesting funding for marketing and MER for the Series 2 rates (ET-2, ECT-2, GS-Schools). Currently, over 50% of the Company's residential customers subscribe to a TOU rate. APS estimates the 2011 TOU load reduction will be approximately 18.1 MW.

## *E. INTERRUPTIBLE RATE*

APS is currently in the process of designing an Interruptible Rate Rider ("IRR") for General Service customers with electrical demands over 3 MW and will file for Commission approval by July 1, 2010, as required by rate case Decision No. 71448, December 30, 2009. In this 2011 Plan, APS is requesting that the costs for marketing this rate be recovered through the DSMAC in 2011.

An interruptible rate allows a utility to interrupt customer load at times of high peak load, high wholesale prices, supply constraints, or system emergencies, either by direct control of the utility system operator or by action of the customer at the direct request of the utility. This new IRR will provide a range of options with respect to notice requirements, duration, and frequency, and will provide credits to participating customers based on avoided costs. APS estimates the 2011 IRR load reduction to be approximately 2.2 MW.

[5] Approved by the Commission in Decision No. 71448 (December 30, 2009).

## *F. HOME ENERGY INFORMATION PILOT PROGRAM*

On March 1, 2010, in a separate docket[6], APS filed for Commission approval of its Home Energy Information ("HEI") Pilot as required by Commission Decision No. 71448. In this 2011 Plan, APS is requesting that costs associated with the HEI Pilot Program be recovered through the DSMAC in 2011.

The objective of the program is to provide additional customer benefits from the deployment of AMI metering technology through in-home metering devices and access to information regarding the real time cost of generation, as well as the utility's peak times for generating renewable energy.

APS's HEI Pilot is designed to test available home area network technologies and determine communication devices, DR strategies, and the mix of "smart" home applications that can be most effectively employed in a residential setting. In addition, the HEI Pilot will assess customer acceptance, value, and frequency of usage of in-home energy displays or other communication devices designed to assist customers in managing their daily energy usage. The pilot will be conducted over two summer seasons (2011 and 2012) allowing the Company time to choose technology vendors, solicit residential participants, install devices and communications systems, and determine measurement and evaluation techniques.

APS proposes to offer the following five technology assessment programs as part of the HEI Pilot: 1) Critical Peak Pricing with Customer Control Device, 2) In-Home Energy Information Display, 3) Direct Load Control, 4) "Smart" Phone/Personal Computer In-Home Display and 5) Pre-Pay Service.

The data collected and analyzed in the HEI Pilot will allow APS to better design and implement future DR, EE, and smart grid applications. The HEI Pilot was part of a broader plan to increase APS's DR portfolio by at least 250 MW. No 2011 load reduction will be credited in the DR energy savings calculation since this is a pilot program and the savings will be unknown at that time. As part of the filing, APS also provided a plan for other future DR programs including, Thermal Energy Storage, Standby Generation, and future potential innovative technologies such as Battery Storage and Electric Vehicles.

[6] Docket No. E-01345A-10-0075 (March 1, 2010).

# VI. Budget

Budget projections are based on meeting the total DSM savings goal of 391,000 MWh in 2011. These budget projections are also based on recent experience in the APS market place, expected customer program participation growth, contractors' experience in similar markets, and approval of all program enhancements within this 2011 Plan.

## *A. ENERGY EFFICIENCY BUDGET*

Table 4 shows a summary of the anticipated 2011 EE spending by program. This budget represents the estimated spending required to meet the 2011 EE savings goal of 352,000 MWh. These projections are based on APS's best estimates of market penetration for each program measure. To the extent that certain programs achieve greater or less success and market penetration than others, it is important to be able to adjust budgets between measures accordingly to maximize the effectiveness of the overall portfolio. Table 4 also includes the budget for program MER, and the estimated program performance incentive for 2011.

Large customers with annual usage greater than 40,000 MWh qualify to self direct their funds for their own EE projects in 2011. To date, no customer has applied for Self Direction; although the deadline is December 1, 2010, for qualified customers to notify APS to self direct their funds. This budget assumes no customer will self direct their funds in 2011.

# Table 4
# APS Energy Efficiency Programs
# 2011 Estimated Budget
# (Dollars)

| Program | Rebates & Incentives | Training & Tech Assistance | Consumer Education | Program Implement | Program Marketing | Plan & Admin | Financing | Program Total Cost |
|---|---|---|---|---|---|---|---|---|
| **Residential** | | | | | | | | |
| Consumer Products | $4,401,000 | $41,000 | $145,000 | $1,767,000 | $975,000 | $218,000 | $ 0 | **$7,547,000** |
| Existing Homes | $9,577,000 | $334,000 | $365,000 | $2,906,000 | $910,000 | $263,000 | $205,000 | **$14,560,000** |
| New Construction | $1,300,000 | $175,000 | $125,000 | $412,000 | $588,000 | $200,000 | $ 0 | **$2,800,000** |
| Appliance Recycling | $315,000 | $ 0 | $21,000 | $996,000 | $314,000 | $15,000 | $ 0 | **$1,661,000** |
| Low Income | $2,594,000 | $10,000 | $20,000 | $50,000 | $30,000 | $75,000 | $ 0 | **$2,779,000** |
| Behavioral | $ 0 | $ 0 | $25,000 | $897,000 | $ 0 | $95,000 | $ 0 | **$1,017,000** |
| Multi-Family | $570,000 | $20,000 | $25,000 | $562,000 | $65,000 | $35,000 | $ 0 | **$1,277,000** |
| Shade Trees | $50,000 | $45,000 | $25,000 | $219,000 | $55,000 | $25,000 | $ 0 | **$419,000** |
| **Totals for Residential** | **$18,807,000** | **$625,000** | **$751,000** | **$7,809,000** | **$2,937,000** | **$926,000** | **$205,000** | **$32,060,000** |
| **Non-Residential** | | | | | | | | |
| Large Existing | $8,588,000 | $ 388,000 | $ 87,000 | $3,165,000 | $867,000 | $601,000 | $ 96,000 | **$13,792,000** |
| New Construction | $1,769,000 | $ 127,000 | $ 25,000 | $1,025,000 | $284,000 | $180,000 | $ 0 | **$3,410,000** |
| Small Business | $3,315,000 | $ 92,000 | $ 10,000 | $607,000 | $205,000 | $183,000 | $48,000 | **$4,460,000** |
| Schools | $2,239,000 | $ 99,000 | $ 13,000 | $678,000 | $221,000 | $113,000 | $95,000 | **$3,458,000** |
| Energy Info. Services | $138,000 | $ 10,000 | $ 5,000 | $20,000 | $10,000 | $12,000 | $ 0 | **$195,000** |
| **Totals for Non-Residential** | **$16,049,000** | **$ 716,000** | **$ 140,000** | **$5,495,000** | **$1,587,000** | **$1,089,000** | **$ 239,000** | **$25,315,000** |
| **Segment Totals** | **$34,856,000** | **$1,341,000** | **$891,000** | **$13,304,000** | **$4,524,000** | **$2,015,000** | **$444,000** | **$57,375,000** |
| **% of Cost By Category** | **60.8%** | **2.3%** | **1.6%** | **23.2%** | **7.9%** | **3.5%** | **0.8%** | |

| | |
|---|---|
| **Program Costs** | **$57,375,000** |
| **Measurement, Evaluation & Research** | **$2,500,000** |
| **Performance Incentive** | **$8,383,000** |
| **TOTAL** | **$68,258,000** |

*This budget is an estimate of the spending needed to meet the 2011 energy efficiency annual MWh goal. If this target is not met or is exceeded, then the spending and performance incentive will vary accordingly. Additionally, even if the target is met, the cost per kWh of savings may vary. For these reasons, the actual spending in 2011 will vary from the point estimate provided in Table 4.*

A total of 65% of the projected program costs will benefit customers directly in the form of incentives, training, technical assistance, or education. The other 35% of program costs is earmarked for program implementation, marketing, and administration expenses. These other expenses are necessary to deliver the EE programs to customers.

## *B. DEMAND RESPONSE BUDGET*

Table 5 shows a summary roll-up of the anticipated 2011 DR spending by program or initiative. The budget projections are based on estimates of the various DR programs.

**Table 5**
**APS Demand Response Programs/Initiatives**
**2011 Estimated Budget**
**(Dollars)**

| Program /Initiatives | 2011 |
|---|---|
| APS Peak Solutions[SM] (1) | $6,679,000 |
| Demand Response Marketing and MER of Rate Options (2) | $260,000 |
| Home Energy Information Pilot Program (3) | $3,681,000 |
| **Total** | **$10,620,000** |

**Notes:**

1. The 2011 APS Peak Solutions estimated cost includes a 2010 adjustment amount of $808,559 for increased measurement and verification, computer model development, and metering costs.
2. DR Marketing and MER dollars are for the following: a) Time of Use rates (ET-2, ECT-2, and GS-Schools), b) Super Peak rate, c) Critical Peak Pricing rates, and d) Interruptible rate that are currently not collected through rates.
3. The estimated budget[7] for the Home Energy Information Pilot through end-of-year 2011 is $5,976,000. $3,681,000 is the estimated total O&M expenses and associated carrying costs for capital expenditures with deferred recovery through end-of-year 2011.

## *C. SUMMARY*

In summary, the total DSM budget for implementation of programs in 2011 is as follows:

| | |
|---|---|
| Energy Efficiency Programs | $68,258,000 |
| Demand Response Programs | $10,620,000 |
| TOTAL DSM Budget for 2011 | $78,878,000 |

[7] Details about the program and budget are provided in Docket No. E-01345A-10-0075.

## *D. DEMAND SIDE MANAGEMENT ADJUSTMENT CHARGE*

The DSMAC agreed to by the parties in the Settlement Agreement allows for more concurrent recovery of DSM program costs and incentives than was allowed previously. Because of the transition from a lagging DSMAC to a forward-looking DSMAC in 2009, the old DSMAC recovered costs through 2008 and the new DSMAC began recovering 2010 costs leaving 2009 costs unrecovered. Decision No. 71460, January 26, 2010, requires APS to recover one-third of all unrecovered 2009 costs each year over the three years of 2010, 2011, and 2012 without interest.

Because 2011 will be the second of three transition years to the new forward-looking DSMAC, the DSMAC charges for 2011 will recover the projected costs for 2011 (less $10 million recovered in base rates), the second third of 2009 costs, and the true-up of 2007-2008 costs collected in 2009, and credit for certain gains for the sale of APS property.

Decision No. 71104, June 5, 2009, authorized the projected costs from the approved Commercial and Industrial Customer Load Management DR program to also be recovered through the DSMAC beginning in 2010. In addition, the Company is requesting Commission approval for recovery of incremental costs for marketing, customer acquisition, and MER for DR rates, which includes time-of-use rates, through the DSMAC.

Attachment 3 contains the schedules supporting APS's proposed DSMAC and the corresponding customer charges necessary to recover the projected EE and DR costs. These estimated charges will change as the EE budget is modified in APS's 2011 Plan supplemental filings for new programs and measures.

The estimated 2011 DSMAC charges of $0.002682 per kWh and $0.956 per kW, are comparable to the present charges of $0.001646 per kWh and $0.720083 per kW. The bill impact is anticipated to be less than 1% for all customer classes. APS is not asking the Commission to approve the specific charges for the DSMAC until later this year because the estimated cost of the 2011 programs will likely change slightly between now and final approval.

Table 6 is a summary of the DSM program costs APS used to calculate the 2011 DSMAC charges. With Commission approval, the 2011 DSMAC charges will be effective with billing cycle 1 of March 2011.

# Table 6
# Estimated DSM Program Costs for 2011 DSMAC Charge

## 2011 DSM Budget

| | |
|---|---|
| Energy Efficiency Program Costs | $57,375,000 |
| Measurement Evaluation and Research | $ 2,500,000 |
| Total Energy Efficiency (before incentive) | $59,875,000 |
| Performance Incentive | $ 8,383,000 |
| Total Energy Efficiency (with incentive) | $68,258,000 |
| Demand Response | $10,620,000 |
| Total 2011 DSM Budget | $78,878,000 |

## 2011 Revenue Requirements for DSMAC

| | |
|---|---|
| Total 2011 DSM Budget | $78,878,000 |
| 2009 Budget Carryover to 2011 | $5,332,979 |
| Amount Recovered in Base Rates | ($10,000,000) |
| Subtotal | $74,210,979 |
| Credit for Gains from Asset Sales | ($118,000) |
| Recovery of True-up Balance | $359,100 |
| Total Revenue Requirement for DSMAC - 2011 | $74,452,079 |

# VII. DSM Energy Savings and Benefits

The DSM energy savings and benefits come from both EE and DR programs.

## *A. ENERGY EFFICIENCY PROGRAMS*

APS's energy savings goal required by the Settlement Agreement is defined as 1.25% percent of total current year energy resources needed to meet retail load. This 2011 Plan provides an overview of the EE and DR programs necessary to achieve the 2011 energy savings goal required by the Settlement Agreement. That same decision stated that if higher goals were adopted by the Commission in another docket, then those higher goals would supersede the goal outlined in the Settlement Agreement. For 2011, the 1.25% goal outlined in the Settlement is higher than that presently being considered by the Commission as part of the EE Rulemaking[8], and thus it prevails as the goal this 2011 DSM Implementation Plan is designed to achieve. APS's energy savings goal required by the Settlement Agreement is defined as 1.25% percent of total current year energy resources needed to meet retail load. APS estimated 2011 energy savings goal is provided in Table 7 below:

**Table 7**
**2011 Estimated Energy Saving Goal**
**(Annual MWh)**

| | |
|---|---|
| Projected Total Energy Resources for 2011[(1)] | 31,300,000 MWh |
| DSM Goal as a Percent of Total Energy Resources in Current Year | 1.25% |
| DSM Goal as required MWh savings | 391,000 MWh |
| [(1)] 2010 Quarter 1 Long-Range Forecast, including 7.0% losses, Business-as-Usual (before impacts of EE and DR) | |

(Please note that this goal is estimated at 391,000 MWh based on the current forecast of total energy resources and is rounded to the nearest 1,000 MWh. The actual goal to be achieved will necessarily be different because it will be based on the actual measurement of total energy resources for 2011, which can only be determined once the year is over.)

The Company has projected the estimated energy savings, costs and net benefits associated with the EE programs. For the analysis of net program benefits, the Company uses the utility system avoided cost savings (including capacity value, fuel and operations/maintenance savings, and transmission and distribution savings) that will result from the expected lifetime energy savings and peak demand reductions generated by each EE program. These avoided costs are consistent with the values that will be used in the 2010 Resource Plan that is anticipated to be filed later this year.

[8] Docket No. RE-00000C-09-0427.

Table 8 provides details of the expected annual and lifetime energy savings and peak demand savings from each EE program and a summary of the net benefits generated for 2011. These are in addition to energy savings, costs and net benefits achieved previously from the 2005 through 2010 timeframe, which are reported in APS's Semi-annual DSM Report filings. The lifetime energy savings are the estimated savings that will result over the expected lifetime of all program measures installed in 2011. It is anticipated that over the expected lifetime of all 2011 measures, the portfolio will produce net benefits of $124.8 million, with a total societal benefit/cost ratio of 2.38 (societal benefits / societal costs = $215.4 million / $90.5 million). This means that EE measures within this plan cost 2.38 times less than the next lowest cost energy resource.

# Table 8
# Energy Efficiency
# Electric Savings Benefits[1]
# 2011 Programs

| | Capacity Savings MW | Annual MWh Savings | Lifetime[2] MWh Savings | Societal Benefits | Societal Costs | Net Benefits |
|---|---|---|---|---|---|---|
| **Residential** | | | | | | |
| Consumer Products | 14.0 | 99,000 | 615,000 | $40,054,000 | $8,189,000 | $31,865,000 |
| Existing Homes | 16.7 | 22,000 | 290,000 | $32,834,000 | $22,514,000 | $10,320,000 |
| New Construction | 3.7 | 7,000 | 155,000 | $16,410,000 | $4,428,000 | $11,982,000 |
| Appliance Recycling | 1.6 | 11,000 | 66,000 | $4,241,000 | $1,346,000 | $2,895,000 |
| Low Income[3] | 0.2 | 2,000 | 35,000 | $2,529,000 | $2,529,000 | $ 0 |
| Conservation Behavior | 3.4 | 25,000 | 25,000 | $1,097,000 | $1,017,000 | $80,000 |
| Multi-Family | 0.6 | 4,000 | 35,000 | $2,224,000 | $1,282,.000 | $942,000 |
| Shade Trees | 0.4 | 1,000 | 18,000 | $1,546,000 | $1,104.000 | $442.000 |
| **Totals for Residential** | **40.6** | **171,000** | **1,239,000** | **$100,935,000** | **$42,409,000** | **$58,526,000** |
| **Non-Residential** | | | | | | |
| Large Existing Facilities | 15.1 | 101,000 | 1,287,000 | $ 62,194,000 | $ 22,939,000 | $ 39,255,000 |
| New Construction | 1.6 | 27,000 | 377,000 | $ 16,260,000 | $ 4,952,000 | $ 11,308,000 |
| Small Business | 6.1 | 28,000 | 439,000 | $ 19,455,000 | $ 4,606,000 | $ 14,849,000 |
| Schools | 4.6 | 23,000 | 314,000 | $ 15,534,000 | $ 4,515,000 | $ 11,019,000 |
| Energy Information System | 0.2 | 2,000 | 27,000 | $ 996,000 | $ 224,000 | $ 772,000 |
| **Totals for Non-Residential** | **27.6** | **181,000** | **2,444,000** | **$114,439,000** | **$37,236,000** | **$77,203,000** |
| **Subtotal** | **68.2** | **352,000** | **3,683,000** | **$215,374,000** | **$79,645,000** | **135,729,000** |
| Measurement, Evaluation & Research | | | | | $ 2,500,000 | $ (2,500,000) |
| Performance Incentive | | | | | $8,383,000 | $ (8,383,000) |
| **Total** | **68.2** | **352,000** | **3,683,000** | **$215,374,000** | **$90,528,000** | **$124,846,000** |

1. *All saving values are net of free riders and include system line losses.*
2. *Refers to savings over the expected lifetime of all program measures.*
3. *Program costs include weatherization and bill assistance. Societal Costs do not include Bill Assistance because it does not contribute to electric savings. Consistent with Commission Staff's analysis in Decision No. 68647, the societal benefits of the Low Income program are equal to the societal costs.*

## *B. DEMAND RESPONSE PROGRAMS*

As part of the Electric EE Rulemaking[9], DR programs are eligible to meet a portion of the overall EE requirement. Specifically, the APS peak demand reduction may comprise up to two percent of the 22% (proposed EE Standard) EE target in 2020. Furthermore, the DR peak demand reduction contribution shall not exceed 10% of the Proposed EE Standard for any year. APS's 2011 DR programs that could apply toward the Proposed EE target consist of: 1) APS Peak Solutions[SM], 2) Critical Peak Pricing rates - General Service and Residential, 3) Residential Super Peak rate, 4) Time of Use rates, 5) Interruptible Rate, and the 6) Home Energy Information Pilot program.

The DR energy savings formula outlined in the Electric EE Rulemaking[1] is:

DR Energy Savings (MWh) = 2011 DR MW load reduction X 8760 annual hours X 50% load factor

**Table 9**
**2011 DR MW Load Reduction[1]**

| DR Program | Load Reduction (MW) at Meter |
|---|---|
| APS Peak Solutions[SM] | 53.0 |
| Critical Peak Pricing – GS and Residential | 3.6 |
| Residential Super Peak Rate | 0.6 |
| Time of Use Rates | 18.1 |
| Interruptible Rate | 2.2 |
| Total | 77.5 |

[1] No load reduction will be assumed for the HEI Pilot because the savings are unknown at this time.

Substituting the 77.5 MW DR load reduction in Table 9 into the DR energy savings formula, yields 339,450 MWh of potential energy savings from DR programs. Since the proposed EE rulemaking caps the DR contribution at 10% of the EE savings goal (10% of 391,000 MWh), 39,000 MWh will be attributed to the 2011 DSM energy savings in lieu of the higher calculated value of 339,450 MWh.

[9] RE-00000C-09-0427. Decision No. 71436 (December 18, 2009). The Proposed EE Rules are currently pending final approval.

# VIII. Environmental Benefits

Table 10 shows the expected savings in water consumption and air emissions that will result from energy saved by the proposed portfolio of EE programs over the lifetime of the measures installed in 2011.

Consistent with the Commission Staff's proposed EE Rule R14-2-1704, the Company has made a "good faith effort" to quantify the physical units of air emissions and water savings that occur as a result of DSM energy efficiency.

In calculating these environmental benefits, APS believes that the most appropriate values to associate with EE measures are those from the newest combined cycle plants. These natural gas fired plants represent APS's last significant dispatch group and a large portion of the market for power purchased by APS. Any load reduction due to EE measures will most likely displace generation from this type of plant.

The values proposed represent average emissions from APS's newer combined cycle generating units. These values are meant to reasonably approximate newer combined cycle plants and the air emissions and water consumption savings that may be avoided through EE measures. APS did not conduct a detailed study of EE measures, power supply or regional emissions for purposes of developing these emissions values. APS's approach is based on general experience related to power dispatch, reported emissions, the current electricity market, and EE measures. APS believes this approach is a reasonable and cost-effective method of addressing environmental externalities associated with energy efficiency.

The values used to calculate the EE Environmental Benefits are as follows:

| | |
|---|---|
| SOx | 0.00445 lbs/MWh |
| NOx | 0.08455 lbs/MWh |
| $CO_2$ | 899 lbs/MWh |
| PM10 | 0.0247 lbs/MWh |
| Water | 317 gallons/MWh (utility water savings only) |

The avoided costs utilized in analyzing the EE measures being proposed in this filing include $CO_2$ and water costs. Monetization of $CO_2$ is based on $20/Metric Ton beginning in year 2013, and escalated at 2.5% per year thereafter.

At Special Open Meetings held on April 9, 2010 and May 13, 2010, utilities were encouraged to monetize the externalities value of water and include this value in utilities' Energy Efficiency Implementation Plans. While utilities are currently working toward establishing a statewide number through a stakeholder process, APS has valued utility water savings at $650/acre foot based on the Company's most current water contract information. This value is incorporated as part of the Company's avoided cost calculation included in the benefit/cost calculation.

In addition to the utility water value, APS has valued the customer water savings at $0.0040 per gallon of water saved. This calculation is based on the City of Phoenix potable water rates in effect in May 2010.

## Table 10
## Energy Efficiency Environmental Benefits
## 2011 Programs

| | Water Mil Gal | SOx Lbs | NOx Lbs | CO2 Mil Lbs | PM10 Lbs |
|---|---|---|---|---|---|
| **Residential** | | | | | |
| Consumer Products | 195 | 2,737 | 51,998 | 553 | 15,191 |
| Existing Homes | 92 | 1,291 | 24,520 | 261 | 7,163 |
| New Construction | 49 | 690 | 13,105 | 139 | 3,829 |
| Appliance Recycling | 21 | 294 | 5,580 | 59 | 1,630 |
| Low Income | 11 | 156 | 2,959 | 31 | 865 |
| Conservation Behavior | 8 | 111 | 2,114 | 22 | 618 |
| Multi-Family | 11 | 156 | 2,959 | 31 | 865 |
| Shade Trees | 6 | 80 | 1,522 | 16 | 445 |
| **Totals for Residential** | **393** | **5,515** | **104,757** | **1,112** | **30,606** |
| **Non-Residential** | | | | | |
| Large Existing Facilities | 408 | 5,727 | 108,816 | 1,157 | 31,789 |
| New Construction | 120 | 1,678 | 31,875 | 339 | 9,312 |
| Small Business | 139 | 1,954 | 37,117 | 395 | 10,843 |
| Schools | 100 | 1,397 | 26,549 | 282 | 7,756 |
| Energy Information System | 9 | 120 | 2,283 | 24 | 667 |
| **Totals for Non-Residential** | **776** | **10,876** | **206,640** | **2,197** | **60,367** |
| **Total** | **1,169** | **16,391** | **311,397** | **3,309** | **90,973** |

*The environmental benefits listed above occur over the expected lifetime of EE measures installed in 2011.*

# IX. Measurement, Evaluation, and Research

MER verifies the impact and cost effectiveness of the EE programs. Navigant Consulting (formerly Summit Blue Consulting), a nationally renowned energy consulting company, provides the EE program measurement and evaluation services. These measurement and evaluation activities include, but are not limited to:

- Performing process evaluation to indicate how well programs are working to achieve objectives; and
- Performing impact evaluation to verify that EE measures are installed as expected; measurement of savings on installed projects to monitor the actual program savings that are achieved; and research activities to refine savings and cost benefit models and identify additional opportunities for energy efficiency.

The approach for measurement and evaluation of the EE programs is to integrate data collection and tracking activities directly into the program implementation process. In fact, Commission Decision No. 69663, June 28, 2007, requires APS to

> Use measured savings obtained from APS customers by the MER contractor beginning no later than July 1, 2007; and that the averages of actual measured usage, for both standard and upgraded equipment, should be recalculated by the MER from usage samples for each prescriptive measure based on new measurements from the field no less frequently than every two years.

APS integrates the most recent annual MER adjustments and process and impact findings in its annual Implementation Plan.

APS proposes to increase the MER budget from $2.3 million in 2010 to $2.5 million in 2011 to account for the expansion of existing EE programs, as well as to accommodate additional MER activities for the new programs being submitted for approval in this 2011 Plan.

APS will perform measurement and verification of the DR programs peak load reduction with detailed modeling and statistical techniques.

# ATTACHMENTS

# Attachment 1

# Attachment 1
# Energy Efficiency Decision Summary

| Decision # | Effective Date | Description |
|---|---|---|
| 67744 | 4/7/2005 | Establishes funding for DSM at $10M per year in rate base and through an adjuster and additional $6M per year. It further established the semi-annual reporting guidelines and directs APS to create a DSM collaborative working group and submit a final DSM plan for Commission approval. |
| 67816 | 5/5/2005 | Required APS to file a baseline study. |
| 68064 | 8/17/2005 | Approval of the lighting portion of APS's Residential Consumer Products DSM Program. It is further ordered that the incentive provided to lighting manufactures never exceed 50% of the incremental cost to the retail customer. |
| 68488 | 2/23/2006 | Granted interim approval for the Non-residential DSM programs from 2005-2007. Staffs Finding of Facts (a-z) were approved, also APS would be allowed to recover $1M of its Planning & Administration costs. |
| 68648 | 4/12/2006 | Granted approval for the Residential New Construction Program, Residential Existing Homes HVAC Program, Consumer Products flexibility and MER portion of APS's Portfolio Plan. |
| 68647 | 4/12/2006 | Recommended Energy Wise program. |
| 69663 | 6/28/2007 | Ordered APS to credit any unspent DSM funds to the balance of the DSMAC as provided in #67744. It is further ordered that the unrecovered DSM adjustor balance shall accrue interest at the rate recommended by Staff. It is also authorized that APS's performance incentive in its Portfolio Plan with Staff's recommendation is approved. It is also ordered that APS shall convene a Collaborative Working Group to address urban heat island issues. It was also ordered that APS shall use the collaborative meetings to discuss with interested parties and evaluate how performance-based incentives and decoupling of rates from revenues could encourage the procurement of more renewable energy resources. |
| 69879 | 8/28/2007 | Authorized an additional $3.5M for APS's NR Existing Program rebates & incentives for 2007 and subsequent years. Also authorized the existing 52% cap for expenditures for Rebates and Incentives be removed beginning in 07. APS reduce the minimum EER required to qualify for a HVAC rebate, that any reductions to minimum EER requirements to qualify for a rebate (High Efficiency AC Rebate) become effective only concurrent with or after the Quality Install. Measure is fully implemented, that APS implement the HVAC System Testing & Repair measure. |
| 70033 | 12/4/2007 | Part of the 13-month filing. It is ordered that $390,000 be shifted from the Appliance component to the CFL component. |
| 70637 | 12/11/2008 | Final approval of the Non-residential Program. |
| 70666 | 12/24/2008 | Approval of the DSM Portfolio Plan. |
| 70295 | 4/25/2008 | Authorized APS to apply a 2007 Net Gains on Utility Property account credit of $271,768 to reduce the balance in the DSMAC account in 2008. |

| Decision # | Effective Date | Description |
|---|---|---|
| 70960 | 4/7/2009 | Approval of Quality Install for Residential HVAC. |
| 70961 | 4/7/2009 | Approval of the DSMAC and low income customers are exempted from being charged the DSMAC. |
| 71243 | 8/6/2009 | Commission approved that ARRA funds should not be subject existing DSM incentive caps, but the sum of all incentives including ARRA, should not exceed 100% of the incremental cost of the measure. |
| 71283 | 10/7/2009 | Modification to Decision 70960 to allow payment of rebates to non-members of the Heat Pump Council and the Electric League of Arizona. |
| 71436 | 12/18/2009 | Notice of Proposed Rulemaking for the Electric Energy Efficiency Rules. |
| 71444 | 12/23/2009 | Partial approval of the 2010 DSM Plan including the New Appliance Recycling program, changes to the Schools program, and Self Direction. It also required that APS file a residential repayment financing program by 2/26/2010. Required that the marketing and promotion budget for low income program to be increased by $10,000. |
| 71448 | 12/30/2009 | Approval of DSM energy savings goals of 1.0% in 2010, 1.25% in 2011 and 1.5% in 2012. Performance incentive approval. APS shall file Implementation Plans for 2010, 2011, and 2012 each year. |
| 71460 | 1/26/2010 | Approval of the remaining 2010 DSM Plan; Consumer Products added 3 new measures, added Home Performance element, enhanced Non-residential New Construction (Whole Building Design), approved financing for Non-residential and approved the new budget for 2010 with the DSMAC. |
| 71503 | 3/17/2010 | Residential New Construction ENERGY STAR Plus program approval. In addition, incremental costs for all DSM measures should not be reduced by federal tax credits for purposes of determining program cost-effectiveness or for net benefits on which the Performance Incentive is based. |

# Attachment 2

Attachment 2
Residential Conservation Behavior Pilot Program

**Table of Contents**

**Residential Conservation Behavior Pilot Program**

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**Program Concept and Description**

- The Residential Conservation Behavior Pilot Program will provide participating residential customers with periodic reports on a bi-monthly basis with information designed to motivate them to change their energy usage behavior to save energy.
- Many customers want to save more energy; they are just unsure what the best strategies are for their home and lifestyle. Customers are also often unaware of how efficient they currently are and how their energy usage compares to others with similar homes and lifestyles.
- To drive conservation behavior, this program will provide Comparative Home Energy Reports that show how the energy usage in a customer's home compares with similar homes along with recommendations for specific actions that the household can take to save energy. Reports will be direct mailed to customers, and participants will also be encouraged to access a program web portal for more information.
- In addition to providing targeted educational messages about the best strategies for saving energy, the program applies insights from behavioral science to motivate conservation behavior.
- The proposed program approach uses the power of normative messaging to successfully engage and motivate conservation actions across a very high percentage of targeted individuals. Comparing an individual's energy use to what is "normal" in their neighborhood has proven to be an almost universally appealing mechanism to grab people's attention and motivate action. Normative messaging on energy use, combined with highly targeted recommendations on how to improve, is the basis of the concept for the Conservation Behavior program.
- By comparing use to others, including the "most efficient" neighbors, as well as showing specific actions that others took to save energy, the program provides a benchmark for customers to achieve and instills a sense of competition to produce sustained conservation behaviors.

**Target Market**

Behavioral initiatives could potentially apply to all APS customers. The focus for this effort is APS residential customers in single and multi-family homes. Up to 80,000 residential customers will be selected to participate in the pilot program. Customers will be able to "opt out" of the program at any time.

APS will work with the selected program implementation contractor and the APS measurement, evaluation and research contractor (Navigant Consulting) to finalize the pilot program targeting strategy. This selection will maximize the potential for savings by analyzing the APS customer base to determine which customer segments will be most likely to yield the highest energy savings. To assess the potential for energy savings among higher usage residential customers who have the most ability to reduce use, it is

expected that the pilot program participants will be largely comprised of higher than average usage customers. In addition, the pilot will include a large sample of average usage residential customers to assess the average savings that could be expected over a larger program implementation. Finally, APS intends to target some low income households for participation in the pilot program.

The target population will be selected and then randomly assigned to a participant group and a control group to facilitate evaluation of program savings (see the Measurement and Evaluation section of this program description for more information).

**Current Baseline Conditions**

- While consumer awareness regarding energy efficiency is increasing, and an ever increasing percentage of people express a willingness to take action, there is often confusion about energy efficiency terms, what concrete steps can be taken and how much of an impact they will have. There is also a significant gap between awareness and action. Many people believe they are "doing all they can" while the reality is there are many other cost effective things they could do to save more energy.
- Favorable attitudes toward energy efficiency in general do not necessarily correlate with intentions to purchase specific energy efficient products or take particular energy efficient actions.
- The primary barriers to wider spread implementation of energy efficiency behaviors are:
    - Efficiency is invisible
    - Most people when asked if they want to save energy will say yes. Often they think they are already doing what they can to be energy efficient
    - Not knowing what to do, or what to do first
    - Not knowing where to obtain energy efficient products and services
    - Perceptions of cost, financial constraints
    - Doubt regarding the ability to make a significant difference in energy use/cost

**Program Eligibility**

- All APS residential customers could potentially be eligible for this program. The pilot phase will be offered and delivered to a targeted group of approximately 80,000 residential customers. This program is suited to being implemented with a broad range of residential customers, potentially reaching every customer irrespective of income, education level, and access to technology. This program also applies to both owner occupied and rental housing units.

**Program Rationale and Objectives**

- Technology-based energy efficiency achieves only a finite amount of efficiency potential. The barriers to wider spread implementation of energy efficiency are often sociological not technological.

- One of the fastest, most cost effective ways to drive energy efficiency on a large scale is to help individuals make small adjustments to their daily consumption habits.
- According to the American Council for an Energy Efficient Economy (ACEEE), the potential for behavior-related energy savings in the residential sector alone represents roughly 25 percent of current residential sector energy consumption.
- Some of the major objectives from this pilot program are to:
  - » Instill conservation behaviors that generate savings for DSM portfolio objectives
  - » Develop relationships with APS customers leading to other areas of participation in APS's portfolio of DSM programs
  - » Promote efficient building operations and lower energy bills for the consumer
  - » Learn more about behavioral based energy efficiency programs

**Program Implementation**

- Behavior based energy efficiency programs are currently being implemented in more than 25 utilities nationwide. However, this program concept is still relatively new and there are few providers who offer these implementation services.
- APS met with four potential providers and has provisionally selected OPower to implement the pilot program, pending program approval and contract execution. This selection was based in part on their demonstrated ability to produce measurable savings in similar programs in other states.
- APS will oversee program implementation and coordination of program messages with other APS programs and services.

**Incentive Design**

- No incentives are provided in this program. Customers receive free customized energy efficiency reports.

**Delivery Strategy and Administration**

- APS will work with an implementation contractor to deliver this program.
- The selected implementation contractor will work closely with APS to develop program messages and integrate this program with all other APS efficiency programs.
- The implementation contractor will deliver customized Comparative Home Energy Reports on a quarterly to bi-monthly basis to participating customers.
- Program delivery will be offered in 4 phases as follows:

**Phase 1: Pilot**

A pilot version of the program will be designed and a control group identified. Through this pilot, the program concept will be tested.

**Phase 2: Refinement**

A third party will conduct an evaluation of pilot participants as well as control group to assess effectiveness of Behavior Change Pilot. Pilot results will be analyzed and program design refined according to findings

**Phase 3: Roll out of full program**

If the evaluation of the pilot program shows that it achieves cost effective energy savings, APS would likely propose to expand the reach of the program to engage a much larger number of households.

**Phase 4: Evaluate**

Ongoing evaluation will be conducted to verify savings and continually refine the program delivery.

**How to Tie in with Existing Programs**

- The programs Comparative Home Energy Reports will integrate well with other APS program offerings. The reports will specifically target promotions of APS energy efficiency programs based on customer profiles and customize program messages and offers that would best apply to each customer.
- One of the key benefits of this program is that it offers a great vehicle for promoting all of the APS rebate programs in addition to achieving savings from conservation behaviors. It is anticipated that in addition to achieving conservation related savings of approximately 2% usage reductions per household, this program can help increase participation in other efficiency programs by up to 25%.

**Marketing and Communications**

- For the pilot phase of this program, the marketing and communications would be limited to participating customers only. A targeted group of customers will be provided with direct mail reports from APS. These participants may opt out if they choose to. They may also opt to receive email reports and/or interact by web portal.

**Program Implementation Schedule**

- APS estimates that this pilot program could start within 8-12 weeks after approval.
- The planned pilot phase of the program would be implemented for 12 months, scheduled from January 2011-December 2011. Throughout the pilot phase, measurement and evaluation will be ongoing to track usage patterns and savings from the participant group as compared to the control group.
- At the conclusion of the 12 month pilot phase, APS will submit a measurement and evaluation report to the ACC to document the program savings achieved, and suggest next steps for program termination, redesign, and/or expansion.
- If the evaluation report finds that the pilot program produces cost effective savings, APS would propose to continue and expand the program in 2012 beyond the pilot. In

this case, APS requests that implementation of the program should continue uninterrupted into 2012 pending Commission action on program approval beyond the pilot.

**Measurement, Evaluation and Research Plan**

The pilot program evaluation design includes the setup of test and control groups:

- Once a target population is selected, the population will be randomly divided into two statistically equivalent groups. A participant group will receive the conservation behavior reports and a control group would receive no reports.
- To ensure consistency between the participant and control groups, we will conduct an analysis of billing histories to verify that there is no significant historical difference in usage between test and control groups.
- Evaluation will be conducted concurrently with the pilot implementation. On a monthly basis, actual usage from both the pilot program participants and the control group will be tracked to compare average energy use for both groups.
- To avoid potential "double counting" of savings, participation in APS rebate programs will be tracked for all behavioral program participants. The savings associated with each APS measure that received a rebate will be tracked and incremental savings subtracted from the savings for each household. This will ensure that only behavioral conservation savings are being attributed to this program.
- The evaluation will determine if there is a statistically significant difference in usage from the participant group as compared to the control group. If there is, it can be correlated that the participant group's savings were a result of the conservation behavior reports.

**Program Budget**

**Table 1 - 2011 Pilot Program Budget**

| **Year** | **2011** |
|---|---|
| Incentives | $0 |
| Delivery Costs | $1,017,000 |
| Incentives as % of Budget | N/A |
| Total Budget | $1,017,000 |

**Estimated Energy Savings**

Estimated savings for the pilot program are based on findings from similar programs in other states. In particular, a large scale program evaluation of the Sacramento Municipal Utility District (SMUD) Comparative Energy Reports program found that participating customers achieved an average usage reduction of 2.4% as compared to a control group.

Total annual participation goals and demand and energy savings are presented in Table 2.

**Table 2 - Conservation Behavior Pilot Program Annual Energy Savings**

| **Year** | **2011 Pilot** |
|---|---|
| Number of expected participants | 80,000 |
| Coincident peak demand savings (kW) per household (Avg. including line losses and reserve margin) | .04 |
| Annual energy savings per household (Avg. including line losses) | 318 kWh |
| Annual Energy Savings 2011 (MWh) | 25,000 |

In addition to the savings shown above, it is estimated that the program will produce the following environmental benefits shown in Table 3 from savings achieved in 2011.

**Table 3 - Projected Environmental Benefits 2011**

| | |
|---|---|
| Water Savings | 7,925,000 Gallons |
| Sox | 111 Lbs |
| NOx | 2114 Lbs |
| CO2 | 22,475,000 Lbs |

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**Program Cost Effectiveness**

The cost effectiveness of the program as a whole was assessed using the Societal Cost Test (SCT). Measure analysis worksheets showing all energy savings, cost and cost-effectiveness calculations are included in Appendix 1 and 2 to this document.

The cost effectiveness analysis requires estimation of:

- Net demand and energy savings attributable to the program;
- Program implementation costs;
- APS's program administration costs; and
- The present value of program benefits including APS avoided costs over the life of the measures.

Table 4 provides a summary of the benefit/cost analysis results for this program. A detailed benefit/cost analysis is presented in Appendix 2.

**Table 4 - Benefit-cost analysis results**

| **Cost Effectiveness Tests** | **SCT** |
|---|---|
| Benefit/Cost Ratio | 1.1 |

In addition to estimating the savings from each measure, this analysis relies on a range of other assumptions and financial data provided in Table 5 below.

**Table 5 - Other Financial Assumptions**

| | |
|---|---|
| Conservation Life (yrs): | 1 year |
| Program Life (yrs): | 1 year |
| Ratio of Non-Incentive to Incentive Costs | 100% |
| Social Discount Rate | 3.72% |
| NTG Ratio: | 100% |

## Appendix 1 – Residential Conservation Behavior Pilot Program Energy Savings

| DSM Estimated Energy Savings 2011 - Proposed Residential Conservation Behavior Pilot Program | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Program** | **Measure** | Coincident Demand Savings per Unit (kW) | Annual Energy Savings per Unit (kWh) | Units | NTG Adjustment Factor | **TOTAL Savings (kW)** | Measure Life (yrs) | **TOTAL Lifetime Savings (kWh)** | **Annual Savings 2011 (kWh)** |
| Residential Behavior Pilot | Conservation Reports | 0.04 | 318 | 80,000 | 1.00 | 3484 | 1 | 25,423,200 | 25,423,200 |
| **Total** | | | | **80,000** | | **3484** | | **25,423,200** | **25,423,200** |

Where:
"Program" = Residential Conservation Behavior Pilot Program
"Measure" = DSM measure = Customized home conservation reports
"Coincident Demand kW Savings per Unit" = Coincident Peak kW savings including line losses and reserve margin
"Annual Energy" = kWh savings/home/year including line losses
"Unit" = APS estimate of expected participation in 2011
"NTG Adjust Factor" = Net to Gross Ratio = factor to account for free riders
"Total Savings (kW)" = Total estimated demand savings from participating customers attributed to this program
"Measure life" - Expected lifetime of the measure - based on DEER database and other national sources
"Total Lifetime Savings (kWh)" = Estimated total energy savings over the expected life of measures
"Annual Savings (kWh)" = Estimated annual energy savings from participating homes in 2011

**Appendix 2 – Residential Conservation Behavior Pilot Program Net Benefits**

| Net Benefits 2011 - Proposed Residential Conservation Behavior Pilot Program | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Measure** | **Avoided cost savings per unit** | **Customer Incremental Cost per Unit** | **PA Costs per Unit** | **SCT Costs per Unit** | **Units** | **Total SCT Costs** | **Total SCT Benefits** | **Total SCT Costs** | **SCT Net Benefits** | **SCT Benefit/Cost** |
| Conservation Reports | $13.71 | $0 | $12.71 | $12.71 | 80,000 | $1,016,800 | $1,097,120 | $1,016,800 | $80,320 | 1.1 |
| TOTAL | | | | | 80,000 | $1,016,800 | $1,097,120 | $1,016,800 | $80,320 | |

Where:
"PA Costs" = Program Administrator costs (also referred to as Non-Incentive costs)
"SCT" = Societal Cost Test

# Attachment 3

# ATTACHMENT 3

ESTIMATED

ARIZONA PUBLIC SERVICE COMPANY
DEMAND SIDE MANAGEMENT PROGRAM

TRUE-UP PERIOD - PROGRAM YEARS 2007 AND 2008
DSMAC REVENUE

| Line No. | | | (A) True-Up Period DSMAC Revenue for April 2009 - February 2010[1] |
|---|---|---|---|
| 1 | Total | $ | 17,113,607 |

[1]Recovery period is April 2009-February 2010 for costs associated with the 2007 and 2008 program year

**ATTACHMENT 3**

ESTIMATED

ARIZONA PUBLIC SERVICE COMPANY
DEMAND SIDE MANAGEMENT PROGRAM

TRUE-UP PERIOD - PROGRAM YEARS 2007 AND 2008
DSMAC REVENUE

| Line No. | Program | (A) True-Up Period Program Costs for 2007 and 2008[1] | (B) Forecast Period Program Costs Forecast for 1/3 of 2009 and all of 2011[2] |
|---|---|---|---|
| 1 | Energy Efficiency (EE) Program Costs (PC) | $ 17,472,707 | 49,875,000 |
| 2 | 2009 Recoverable DSM Program Costs[3] | N/A | 5,332,979 |
| 3 | Performance Incentives (PI)[4] | $ - | 8,383,000 |
| 4 | Sub Total | $ 17,472,707 | $ 63,590,979 |
| 5 | Demand Response (DR) PC[5] | $ - | 10,620,000 |
| 6 | Total | $ 17,472,707 | $ 74,210,979 |

[1]This was the total recoverable program cost for 2008 and a carryover of a portion of 2007 costs
[2]This is the forecast cost for EE PC, PI, and DR PC based on 1/3 of the 2009 actual costs and the full 2011 Implementation Plan less the $10M to be collected in 2011 base rates
[3]$26,000,290 actual recoverable PC and PI in 2009 program year less $10M in base rates and $5,334,333 the 2009 carryover in current DSMAC divided by two years
[4]EE PI is calculated on total PC including PI; PI is 14% in 2011 per the Settlement Agreement approved in Decision 71448
[5]Includes a revision of the 2010 budget of $808,559

# ATTACHMENT 3

ESTIMATED

ARIZONA PUBLIC SERVICE COMPANY
DEMAND SIDE MANAGEMENT PROGRAM

TRUE-UP PERIOD - PROGRAM YEARS 2007 AND 2008
DSMAC REVENUE

| Line No. | Date Period | Cost, Collection and Interest | Reference | | Amount |
|---|---|---|---|---|---|
| 1 | April 2009 - February 2010 | DSMAC Revenue - TU | Schedule 1, Line 1, Column A | $ | 17,113,607 |
| 2 | January 2007 - December 2009 | DSMAC Program Costs - TU | Schedule 2, Line 6, Column A | $ | 17,472,707 |
| 3 | | Sub Total[1] | (Line 1 - Line 2) | $ | (359,100) |
| 4 | Treasury constant maturities rate 1/4/2010 | Interest = 0.45%[2] | (Line 3 * Interest Rate) | $ | - |
| 5 | | Total TU Balance Account | (Line 3 + Line 4) | $ | (359,100) |

[1]Under recovery primarily due to delay in implementing DSMAC by 1 month in 2010
[2]No interest accrues on under recovered amounts

**ATTACHMENT 3**

ESTIMATED

ARIZONA PUBLIC SERVICE COMPANY
DEMAND SIDE MANAGEMENT PROGRAM

TRUE-UP PERIOD - PROGRAM YEARS 2007 AND 2008
DSMAC REVENUE

| Line No. | DSMAC Calculations | Reference | | Amount | Units |
|---|---|---|---|---|---|
| 1 | Program forecast costs for adjustor period in 2011 | Schedule 2, Line 6, Column B | $ | 74,210,979 | |
| 2A | Recovery of True-Up Account (over) under collection | Schedule 3, Line 5 | $ | 359,100 | |
| 2B | Credit for Gains from Asset Sales (over) *under collection*[1] | | $ | (118,000) | |
| 3 | Total amount to be collected | (Line 1 + Line 2) | $ | 74,452,079 | |
| 4 | Forecast retail kWh sales for adjustor period[2] | | | 27,755,088,000 | kWh |
| 5 | Proposed kWh adjustor charge for adjustor period[3] | (Line 3 / Line 4) | $ | 0.002682 | per kWh |
| 6 | Forecast General Service kWh sales for adjustor period[4] | | | 13,380,744,000 | kWh |
| 7 | Amount to be collected from General Service demand metered customers for adjustor period | (Line 5 * Line 6) | $ | 35,887,155 | |
| 8 | Forecast General Service demand billed customer kW | | | 37,538,000 | kW |
| 9 | Proposed kW adjustor charge for forecast period[5] | (Line 7 / Line 8) | $ | 0.956 | per kW |

[1] Credit for certain gains from the sale of APS property per the Commission's action of May 26, 2010.
[2]Forecast retail kWh sales excludes E-3 and E-4 kWh
[3]$/kWh charge for all Residential customers and General Service customers with no demand charge
[4]Forecast General Service kWh for customers with demand charges
[5]$/kW charge for General Service customers with demand charges

# ADJUSTMENT SCHEDULE DSMAC-1
# DEMAND SIDE MANAGEMENT COST ADJUSTMENT

APPLICATION

The Demand Side Management Adjustment Charge ("DSMAC") shall be applied monthly to every metered and/or non-metered retail Standard Offer or Direct Access service with the exception of customers served on rate schedules E-3 and E-4, and Solar-2. All provisions of the customer's currently applicable rate schedule will apply in addition to this adjustment charge. The DSMAC is applied to Standard Offer or Direct Access customer's bills as monthly charge to recover the cost of Commission approved demand side management programs above those costs included in base rates. The DSMAC will be changed in billing cycle 1 of the March revenue month and will not be prorated. The DSMAC and the RES adjustors may be combined on the customer's bill and appear on the "Environmental Benefits Surcharge" line. Details of how the DSMAC is derived and administered can be found in the Demand Side Management Adjustment Charge Plan for Administration.

RATE

The charge shall be calculated at the following rate:

For all residential customers and general service customers whose billing does not include demand charges:

| | | |
|---|---|---|
| All kWh | $0.~~001646~~002682 | per kWh |

For general service customers whose billing includes demand charges:

| | | |
|---|---|---|
| All metered kW | $0.~~720083~~3956 | per kW |

SELF DIRECTION

Self direction of DSM charges collected through base rates and Adjustment Schedule DSMAC-1 shall be available for customers who use more than 40 million kWh per year, based on an aggregation of the usage for all the customer's accounts for the January through December billing months in the year the request for self direction is made.

Qualifying customers who elect to self direct their DSM charges must notify APS on or before December 1st in each year that they wish to self direct. Upon such notification, and verification of eligibility by APS, 85% of the customer's DSM charges paid over the January through December billing months in the election year will be reserved for tracking purposes for the customer's eligible energy efficiency project(s) to be completed within two years. The remaining 15% will be retained to cover the self direction program administration, management and verification, measurement and evaluation, and low-income program costs.

Customers who elect to self direct must continue to pay the DSM charges in base rates and Adjustment Schedule DSMAC-1.

Self direction shall be provided in accordance with the Self Direction Provisions approved in Arizona Corporation Commission (Commission) Decision No. 71448, Attachment C to the Settlement Agreement as modified from time to time with Commission approval.

Self direction amounts shall be the DSMAC-1charges billed over the election year plus the DSM charges recovered in base rates. The latter shall be calculated by multiplying the kWh billed for the System Benefits Charge in the customer's current applicable rate schedule multiplied by $0.000359 per kWh.